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California's Computer Magazine

JULY 1988 • 45

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President Therese Myers On DESQview, IBM, And OS/2

NEW COLUMN:
"Realizable Fantasies" By Computer Faire Founder Jim Warren

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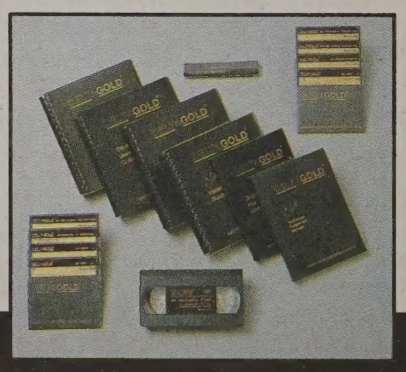
The fact is the Delta Gold Systems are the obvious choice for you.



Specifications of the Standard System

Model	Elite	Prestige	Premier
Microprocessor	• 8 -bit Intel 8088 Turbo, 4.77 or 10 MHz	• 16-bit Intel 80286, 6 or 10 MHz	• 32-bit Intel 80386, 16 MHz
Co-processor	• Socket for 8087 match co-processor	• Socket for 80287 math co-processor	• Socket for 80387 math co-processor
Memory	• 512KB standard, socketed RAM (Zero Wait State), expandable to 768KB	• 512KB standard, expandable to 1 MB on motherboard	• 1MB standard on board RAM (Zero Wait States & fully utilized)
Storage Device	• One 5.25" 360K, half-height drive • Optional space for internal 3½" hard disk drive	• 5.25" half-height, 1.2MB drive • Space for 3 half-height storage devices • Optional space for internal 3.5" hard disk drive	• Standard 1.2 MB half-height drive • 40MB hard disk drive • Space for 5 half-height storage devices
Expansion Slots	• 4 expansion slots	• 8 expansion slots	• 8 expansion slots
Video Adapter	• Hercules equivalent, CGA, MGA, plantronics on motherboard	• MGA (Mono/color Hercules equivalent graphics card)	• EGA (enhanced graphics adapter card with Hercules capability)
Clock/Calendar	• Real time clock/calendar with battery back-up on motherboard	• Real time clock/calendar with battery back-up on motherboard	• Real time clock/calendar with battery back-up on motherboard
I/O Connections	• One serial communications port • One parallel port on motherboard	• 2 serial communications ports (RS-232C) • One parallel port	• 2 serial communications ports • One parallel printer port
Clicking Keyboard	• 84 key Selectric-style keyboard	• 101-key AT layout, Selectric-style	• 101 key AT layout, Selectric-style
Display Features	• 12" high resolution monochrome monitor with tilt swivel	• 12" high resolution monochrome monitor with tilt swivel	• 14" EGA color monitor with tilt swivel
Controller Board	• On motherboard	• Western Digital Winchester and floppy disk controller card	• Western Digital Winchester and floppy disk controller card

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A disturbing look at gender inequality in access to computers and computer training, a pattern which starts as early as preschool.

22 Jim Warren's "Realizable Fantasies"
Computer Faire founder and enthusiastic fomenter of the personal computer revolution, Jim Warren takes an imaginative, eclectic view of the computer and its possibilities. In this column, he hopes to continue a latter-day version of the collective brain-storming and idea-swapping characteristic of the departed Homebrew Computer Club, and perhaps bring a few good inspirations to fruition.

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MAC @ WORK

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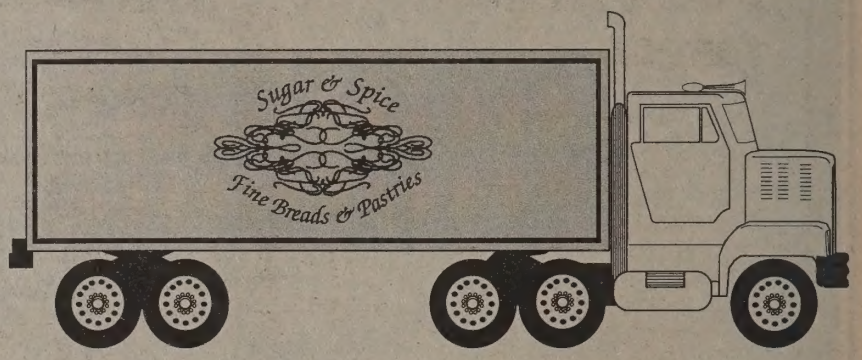

With a long-awaited freehand drawing tool and sophisticated color handling capabilities, this package revolutionizes the creation of PostScript-based art.

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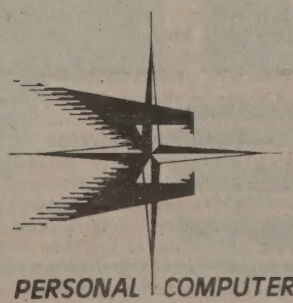

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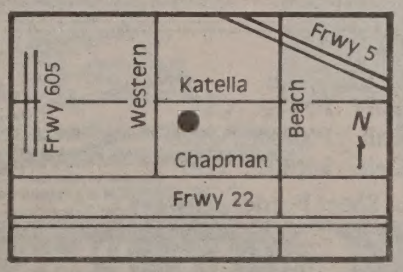

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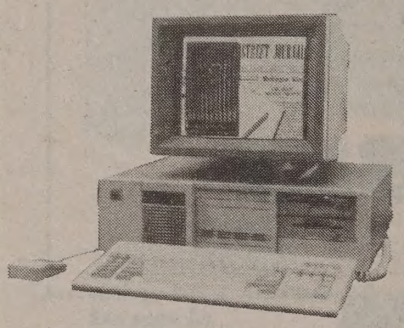

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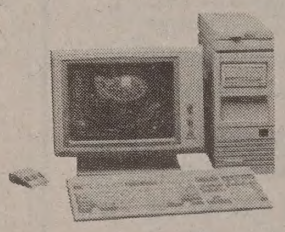

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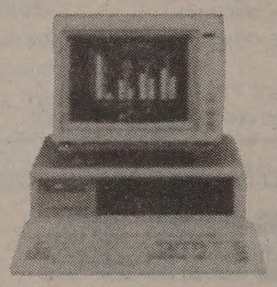

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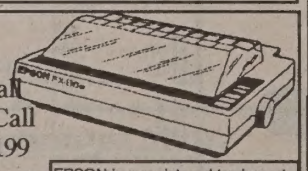

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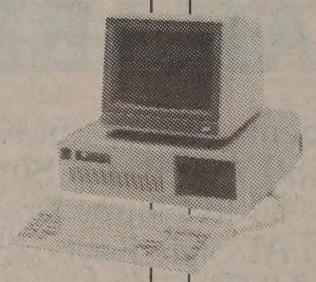

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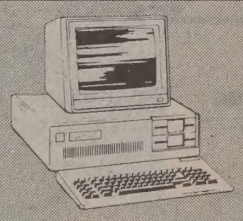

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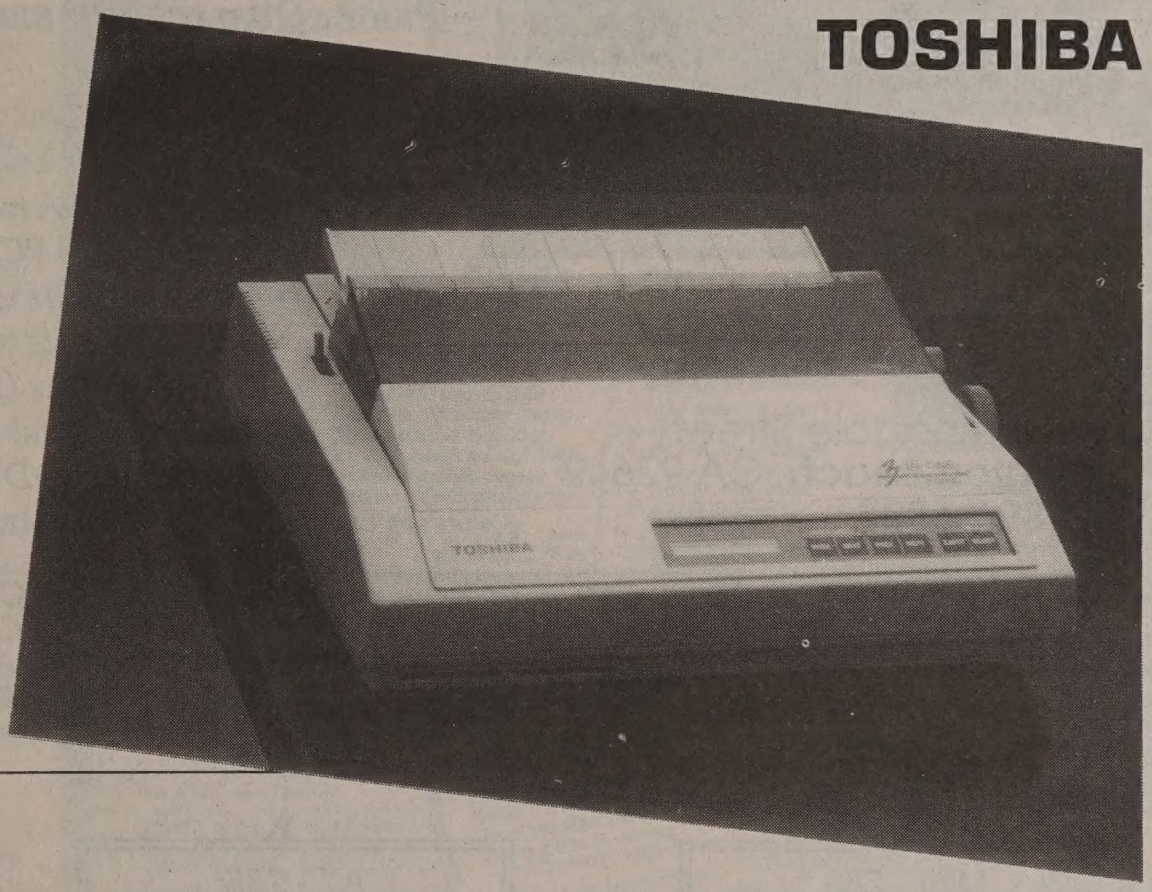

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By Paul Hoffman

U.S. To Sign Berne Convention: What It Means To Computer Software

Congress and the Senate are about to pass legislation causing the U.S. to join the Berne Convention, a treaty of all major world powers (other than the U.S., Russia, and China) covering copyright. All nations signing the treaty promise to give works of authorship certain minimum protections. The Berne Convention has been been in existence for over 100 years and is considered the cornerstone of much of Europe's and Asia's copyright laws. The U.S. has historically refused to sign it for two reasons: it states that the government cannot require registration for the copyright to take effect, and it gives copyright holders "moral rights" over their works.

Recently, most of the opposition to the Berne Convention based on the registration issue was dropped when the U.S. dropped its registration requirement. However, moral rights is still a sticky issue; if the treaty adoption bill is passed, both houses have agreed to take up restrictions on the moral rights as they apply to new works. The bill that has passed Congress and is likely to pass the Senate states that the new restrictions imposed by adopting the Berne Convention will only take effect for new works and will not apply retroactively to works already covered by current copyright law.

Since all computer software is currently covered by U.S. copyright law, the adoption of the Berne Convention could have profound effects on the American computer industry. Surprisingly, IBM was the only computer company to become active in the latest round of lobbying in Congress (although book and magazine publishers took up the slack in arguing both sides of the bill). IBM made adoption of the Berne Convention a major policy issue this year as a method for getting greater protection of its software. However, it is possible that software will be removed from American copyright law in the future, leaving educational, entertainment, and political works as the main items protected by copyright.

The Berne Convention requires that signatory countries:

- guarantee copyright protection for the life of the author plus 50 years
- forbid compulsory licensing of a copyright
- grant protection without requiring a copyright notice (the familiar ©), registration, or deposit of material
- protect the moral rights of authors (such as the right to prevent modifications to the work that degrade the work and reduce the author's integrity or the right to withdraw the work from circulation).

The moral rights section is certainly going to be hotly debated, especially with the advent of "colorization" of movies. As the U.S. defines which moral rights are protected in which circumstances, the inadequacies of copyright for computer software will become clearer. With the advent of "look-and-feel" copyright protection, many sections of the Berne Convention could be used to cripple competitors in the software market.

Software became protected under the copyright section of U.S. law without much consideration of the long-run ramifications. Certainly, there needed to be some protection against copying of software. Since the copyright code was already in place and had worked well to prevent unauthorized copying of books and movies, software fell under the copyright code. Since then, it has been neglected, and very little of the copyright code relates to unique issues concerning software (source vs. object code, embodiment of programs, etc.).

Now, with the Berne Convention's more stringent rules on compulsory licensing and moral rights, many lawyers are starting to feel that software should be protected by other means than the current copyright code. For example, a special form of protection could be created that only covers information and software and does so in a fashion that recognizes the inherent relationship between the two. Or, a special type of patent law could be created for software to give software protection under patent laws.

Some questions that the Berne Convention rules bring up include:

- Can the U.S. take software out of the copyright laws after joining the Berne Convention? Some argue that once you sign an international treaty, you cannot change the local rules about what is covered by the treaty.
- Would it be politically feasible to take software out of the copyright code? Since the Berne Convention gives such long-lasting and tight control over a copyright, large corporations like IBM, Apple and Microsoft may be hesitant to set up a new body of law which, although being more realistic about what software is, gives shorter-lived protections. Large computer companies have usually profited by vague laws that must be decided in the courts since large corporations have much more money to spend on lawyers.

Paul Hoffman is a freelance writer who has written five books about computers.

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Rodime Loses Most Of Patent On 3.5 Inch Hard Disks

In a direct hit at a questionable patent, the U.S. Patent Office has told Rodime plc that its patent for 3.5 inch Winchester disk drives is invalid. This punches a huge hole in Rodime's efforts at suing IBM, Miniscribe and Conner Peripherals over patent infringement. Ironically, Rodime had asked the Patent Office to reaffirm its patent in advance of the court case; instead, the patent office said that 14 of the 16 claims made in the patent were part of the "prior art" and therefore not valid claims; two claims were upheld. Basically, you can't patent what is already known or generally obvious in the field, and the Patent Office said that most of Rodime's claims fell into those categories.

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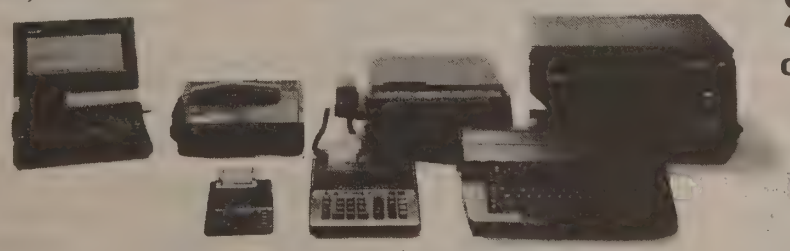

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• How are an author's moral rights infringed by modifications of his code? For instance, could a software manufacturer use the Berne Convention to prevent utility program manufacturers from making programs that work in concert with their programs? By adding functionality to a program, is the utility program modifying the program? What about utility programs that modify the look of a program (such as by adding new features)? This issue becomes especially important for operating systems, and is probably the reason that IBM pushed so hard for acceptance of the Berne Convention. A manufacturer of an operating system might have complete legal control over what sort of programs could be allowed to run under that operating system, depending on the interpretation of the concept of "modifying."

The acceptance of the Berne Convention should keep the copyright lawyers busy for years determining what the effect will be on U.S. copyright. Since the copyright law for software is still in a state of flux due to conflicting judgments in lower courts, it will certainly make the waters for software developers even more muddy. If the U.S. decides to update its software policy and make a separate body of law for software (similar to what it did for chip masks a few years ago), there will certainly be long legal fights about whether such a move is constitutional. Although the Berne Convention gives authors of traditional works more rights, it may end up hampering the software industry to the point where new technologies are ignored or put aside due to previous ownership of copyrights.

COMDEX Spring: Mid-Year Blahs

The highlights of COMDEX Spring, if you could call them that, were important industry analysts telling the audience that the microcomputer industry was in great shape, maybe. There were few significant announcements of new products and only a smattering of interest from computer dealers for what was happening at the show. It almost seemed like the dignitaries outnumbered the attendees.

The keynote speaker, Vittorio Cassoni, spoke as if he still worked for AT&T. Cassoni, who recently moved back to Olivetti after two years at the lead of AT&T's computer division, made an impassioned speech about how important UNIX is and how users all over the world are demanding that vendors provide better UNIX platforms. He said that UNIX now has an "overwhelmingly popular momentum" and that it is a "serious competitive threat" to all other operating systems. At a UNIX convention, this would be considered preaching to the choir; at COMDEX Spring, he was greeted with a few embarrassed giggles and a great deal of indifference. Most of the show floor was dominated by MS-DOS software.

This is not to say that there was no UNIX news at COMDEX Spring. A well-known manufacturer announced its first version of UNIX: Commodore. Yes, you will soon be able to run UNIX on your Commodore Amiga. The version of UNIX that Commodore will market is full UNIX System V and contains all the common UNIX utilities. Commodore said that they expected to sell the UNIX mostly into college environments and in the computer-aided design markets. Commodore also announced a 68020 speed-up board for the Amiga and video products to give the Amiga higher resolution. The products will be available this fall.

IBM's William Lowe and Microsoft's Bill Gates tried to convince listeners of the groundswell of OS/2 applications, but their booths showed that the applications are still few and far between. Although Microsoft has made it much easier to develop OS/2 applications in recent months, many software manufacturers are still saying that they don't intend to have OS/2 versions of their programs available for at least a year. Those who were showing OS/2 applications admitted that their sales had been terrible so far. Apparently, Microsoft is suffering from the same chicken-and-egg phenomenon that kept many software vendors out of the Macintosh market for the first two years. However, IBM still asserts that OS/2 and Presentation Manager are still key to IBM's SAA strategy and that IBM will strongly support software manufacturers who conform to the SAA standards.

If content doesn't thrill you, maybe size will. The term "gigabyte" was being tossed around in a few booths at COMDEX Spring, and the result is that users with huge amounts of data will soon have a place to store them. (A gigabyte, for the number weary, is a billion bytes, or a thousand megabytes.) Maxtor, a major manufacturer of mass storage devices located in San Jose, announced an erasable optical disk system that can store a gigabyte of data and can access that data faster than the average PC hard disk. Their new Tahiti disk series stores 512 megabytes on each side of a 5.25 inch optical disk and can be attached to any computer with a SCSI interface. The drive uses a few new technologies and is much faster than any of its competition. When it is available this fall, the drive will sell for $6000, with each disk costing around $250. Gigatape, Inc. of Santa Barbara introduced a tape drive that holds 1.2 gigabytes on a digital audio tape (DAT). The system is slow and expensive now, but the speed is expected to increase and the cost decrease as the concept catches on. The Giga 1200 records at five seconds per megabyte and costs about $6,500. However, the tapes used by the system will soon be available in record stores for about $10 each.

Other COMDEX Spring announcements:

• Toshiba introduced a CD-ROM player for the Macintosh, which should sell for much less than Apple's CD-ROM player. The new Toshiba drive will have all the capabilities of Apple's drive.

• Zenith expanded its line of AT-compatibles with a new, smaller machine. The Z-286 LP has 3.5 inch floppy drives and takes up only a little more room on a desk than a standard PC monitor (about 13 inches square).

• Holmes Microsystems introduced a board for popular laptop computers which allow them to send and receive FAX copies. This allows businesspeople on the road to send and receive copies of documents that appear as they look on paper.

• A standard joke on the COMDEX Spring floor was that there were more machines without a CPU than at any previous show. This was due to many clone manufacturers having models that used a 25-Megahertz 80386 CPU; however, most manufacturers had fewer than a dozen of the chips on hand so they could not give accurate estimates when the machines would ship. Intel said that it is ramping up production of the chips as fast as possible, but did not give any commitments on when they would be available in quantity.

IBM Buys Part Of Metaphor And Gets Advanced User Interface

Taking one step further from Microsoft, IBM recently bought a small part of Metaphor Computer Systems for $10 million in exchange for the use of the Metaphor graphical interface on IBM's PS/2 line. Metaphor's technology makes it much easier to find data in large and diverse data bases by using easy-to-understand symbols and a special data-processing language. However, Metaphor has mostly used the technology on its own workstations and has sold them in limited quantity to key clients. This is the first time that the Metaphor interface will have a wide distribution.

IBM intends to include the Metaphor software with its version of the OS/2 Extended Edition so that users can access databases more easily. This will directly compete with other hardware vendors who offer OS/2, since they will not be able to replicate the Metaphor interface. Microsoft will be co-marketing a database management package with its version of OS/2 Extended Edition, but the interface is not expected to be nearly as good as IBM's new software. The Metaphor software could help IBM woo customers who want an all-in-one package when they buy their OS/2.

The IBM-Metaphor deal comes during a time when many manufacturers are treading lightly due to the Apple-Microsoft case. Metaphor is considered to be a safe company since the Metaphor product has been out longer than the Macintosh, although not longer than the Apple Lisa. IBM claims that the Apple lawsuit played no part in its decision to go with Metaphor, stating that it has been in negotiations with Metaphor for almost a year. IBM wants to make it as easy as possible for its microcomputer users to access relational databases on its larger systems such as the 9370, and making the interface easy is one of the best methods. IBM will make sure that the Metaphor product follow IBM's SAA guidelines so that the PS/2 will be able to access data from almost any IBM source.

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130 - XGAME
- X-RATED MONOPOLY - Try it, it's fun!!
140 - BJ - Use your imagination . .
150 - JIGGLE - Animated graphics
160 - ASTRO[***) - Game for men
161 - X-RATED PRINTMASTER LB
- x-rated graphics
162 - X-RATED PRINTSHOP LB
- x-rated graphics lib.
180 - BOYS - Fantasy story
190 - MARINES - Fantasy story

APPLICATION

200 - MAKE YOUR OWN DEMO
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210 - PERSONAL TELEMANAGER
- telemarketing database
220 - PHOTO 2.1
- database for your stock photo file

BUSINESS

300 - CHECKMATE 1.5
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310 - CHECKMATE GL
- Full powered, multiple entry GL
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340 - MANAGEX
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1811 - SPANISH VERB CONJ.
- study guide
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1201 - BASIC TUTOR - Learn Basic the easy way
1204 - DOS TUTORIAL
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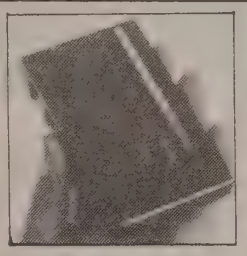

FINALLY HERE IT IS

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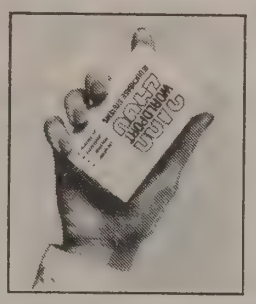

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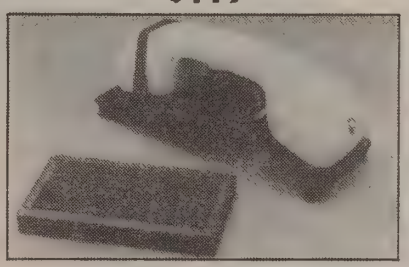

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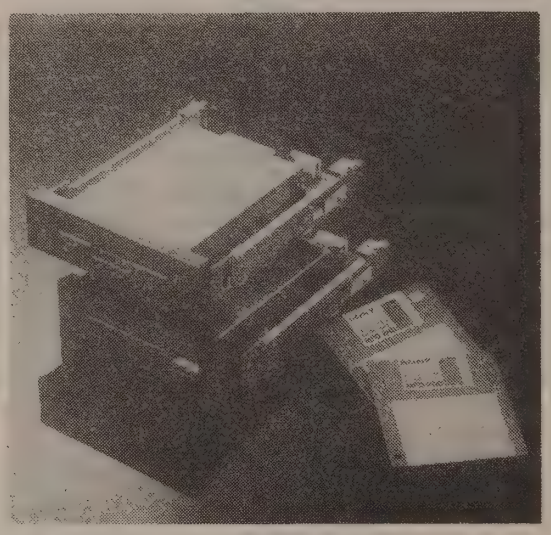

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PRODUCT NEWS

Ashton-Tate Upgrades dBASE Mac, Announces New Runtime For Developers

Ashton-Tate has upgraded *dBASE Mac* to allow it to run other programs from within *dBASE Mac* and to allow it to use XCMD and XFCN functions written for Apple's *HyperCard*. The new version will be free to current users, according to the company. *dBASE Mac* can now take advantage of the growing number of *HyperCard* extensions in its own program, giving it a big lead over other database managers which are not extendable. The XCMD and XFCN functions have been used to interface peripherals such as bar-code readers and CD-ROM drives to *HyperCard*; they will now also work with *dBASE Mac*. In addition, *dBASE Mac* users will also be able to run standard Macintosh programs without having to leave *dBASE Mac*; this allows users to import and export data much more efficiently.

dBASE Mac developers can now distribute their database programs to clients without forcing the client to have a copy of *dBASE Mac*. Ashton-Tate is allowing developers who buy the *dBASE Mac* Runtime to make unlimited copies of the runtime portion for any client, thus freeing them from having to own *dBASE Mac*. The cost of the runtime package is $300. Although sales of *dBASE Mac* have been good, Ashton-Tate feels that this package should help convince developers to use *dBASE Mac* instead of its competitors such as *4th Dimension* and *Omnis*. Ashton-Tate, 213/329-8000.

Borland Updates Turbo Prolog, Offers Free Upgrade

Hoping to spur the growing fifth-generation language market, Borland International announced a new version of its successful Turbo Prolog language and said that it would update current users to the new version for free. Turbo Prolog 2.0, which will sell for $150, includes extensive database support so that developers can set up database applications quickly. The package also supports EMS extended memory for larger programs or programs that access large data sets. The company says that the new features will make it easier to work with the Prolog language, which is becoming popular in the American artificial intelligence market. Borland, 408/438-8400.

Microsoft Word For The PC To Come With Fonts And Pageview

Microsoft announced that, starting immediately, Word 4.0 for the IBM PC will come with coupons for free copies of Bitstream *Fontware* and Microsoft *Pageview*. To get the free software, users simply return the coupons to Microsoft. Bitstream's font installation package, which includes versions of the Helvetica and Times Roman fonts, allows laser printer users (either Hewlett-Packard or PostScript compatible) to use expandable fonts with their work. *Pageview* allows *Word* users with a graphics adapter to preview the output of Microsoft *Word* before they print. *Pageview* also lets you change margins and page setup characteristics before you print. Both packages require a hard disk. Microsoft, 206/882-8080.

Software Publishers Urged To Start Using Universal Product Codes

The Software Publishers Association (SPA) recently urged all software publishers to start using the ubiquitous bar codes on all their products. The SPA feels that this will help computer stores keep better track of inventory and will make the software industry seem more mainstream in the American marketplace. The SPA has send out information on how a company can obtain UPC codes and how to prepare packaging using the UPC codes. Software Publishers Association, 202/452-1600.

Ron Posner Gets Around

Industry veteran Ron Posner, previously executive vice president at Ashton-Tate and president of Ansa before it was bought by Borland, has been named to the board of directors of two companies. He will be on the board of both Migent (developer of the Emerald Bay database technology) and Presentation Technologies (manufacturer of high-quality slide makers for personal computers). Posner has recently left Borland to pursue other business interests, which seems to include being on many boards of directors.

California Assembly Bill Would Create Information Age Commission

Being on the leading edge is never easy, and California has often been on the leading edge of many such as computers. A new bill that is making its way through the California legislature would help California plan for the effects of the information revolution and would thus help the California computer and information industries. Sponsored by Assemblyperson Gwen Moore (D-Los Angeles), AB 3487 would set up and fund the California Commission on the Information Age so that California could be a step ahead of changes in the industry. The bill is currently in the Assembly, having passed successfully out on its first committee test.

Xerox Buys Datacopy To Expand In Desktop Scanner Market

In a move to help maintain its dominance in the rapidly-growing desktop publishing field, Xerox recently announced plans to acquire Datacopy of Mountain View. Datacopy is one of the leading manufacturers of desktop scanners and optical-character recognition (OCR) systems, an area where Xerox has traditionally been weak. Datacopy's scanners work with both Apple Macintosh and IBM PC and can be used to copy pictures or text from pages. Although Xerox has products in its Kurzweil Computer Products subsidiary which also perform these tasks, their products are much more expensive and are not common in the microcomputer market. Datacopy has 90 employees and had revenues of $13 million in 1987. Datacopy will become a division of Xerox and will retain its name and most of its management structure. Xerox, 203/329-8700; Datacopy, 415/965-7900.

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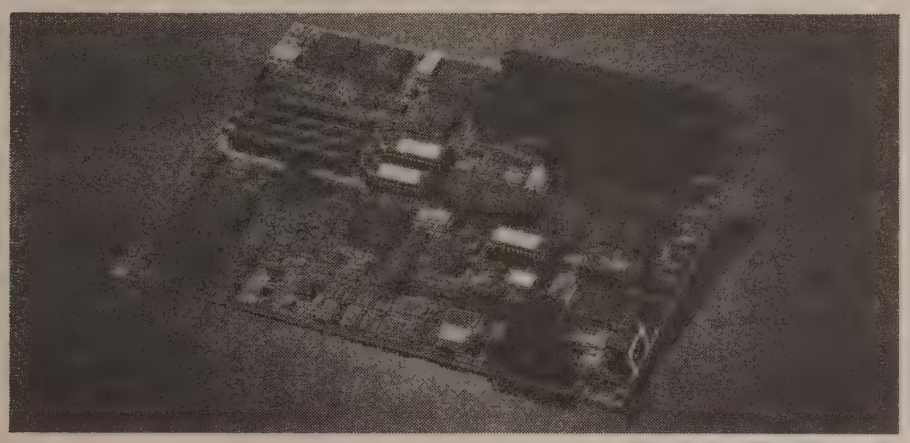

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INDUSTRY ISSUES BY MIKE MARKOWITZ

Are Computers Neuter?

In 415 A.D., Hypatia of Alexandria was brutally murdered by a mob that considered it unnatural for a woman to be a mathematician. Since then, thousands of young women gifted with mathematical, logical, or electronic talent have suffered countless smaller everyday martyrdoms.

The prospects for a twenty-first century technological Renaissance are not bright if more than half the population grows up with the bizarre notion that computer use, like pro football or the priesthood, is a male preserve.

Exhibit A

"I am an adult services librarian and I have recently started teaching a 'Toddler Tech' course on our public access Apple computer. The course is designed to teach computer basics to 2½- to 4-year-olds and their mothers. The course has been going very well, except for the fact that 95% of the mothers who sign up for it are mothers of *sons*. I can't seem to reach mothers of daughters."

According to the Department of Labor, between 50 and 75 percent of the jobs available to the next generation will involve computers in some way. Many of these will be menial, dehumanizing data-entry jobs, of the sort monopoly capitalism has traditionally reserved for women; but many will also be the kind of creative, life-enhancing work at which women so often excel.

Late last year, Apple Computer distributed a remarkable eight-page brochure to teachers and user groups. Titled *Do Your Female Students Say 'No, Thanks' To The Computer?* it was written by Jo Sanders, Director of the Computer Equity Program of the Women's Action Alliance.

The brochure documents an ominous "computer-use gender gap." Junior and senior high schools nationwide report that most free-time users of school computers are boys. When computer use is a required part of the curriculum, of course, everyone participates. But in advanced programming courses, computer summer camps, after-school computer clubs and similar activities, the faces are overwhelmingly male. Images in the media and advertising send a strong message that computer expertise is a male thing — women are mostly shown as secretaries or sex objects.

Images in the media and advertising send a strong message that computer expertise is a male thing. Women are mostly shown as secretaries or sex objects.

The Women's Action Alliance in New York received a two-year grant from the Department of Education to work with schools across the country to overcome computer avoidance by girls. The results of the project became a book: *The Neuter Computer: Computers For Girls And Boys*. The book includes a non-technical exploration of things kids can do with computers. It describes a wide range of action plans people can implement to achieve computer equity in schools. The book provides an extensive bibliography and list of resources. When six basic strategies documented in the book were tried out in test schools, girls' computer use *doubled*. By the end of the term they were using optional computer time as much as boys.

What To Do

Here are some of the recommendations:

1. Let others know. Alert parents and teachers to the computer-use gender gap.

2. Target girls specifically. For example, use sign-up sheets that ensure girls always have access to half the computers, or set up a computer club "especially for girls." To avoid institutionalizing a sex-segregated system, drop this as soon as girls' computer participation becomes firmly established.

3. Design computer activities around girls' existing interests. Graphics programs that create and print out party invitations, banners and posters are a good example. Avoid violent game software (which doesn't belong in any school). But also avoid "fluffware" — programs that are supposedly attractive to female people, featuring interior decoration, recipe databases and shopping mall games. This sort of thing can be sexist, and insulting to girls and women.

4. Stress the social aspect of computing. Make peer pressure a positive force—"if her friends are in the computer room with her, a girl can't worry that they'll think she's weird to like computers."

5. Stress the computer's usefulness. "Many teachers have noticed that boys seem happy to sit for hours on end playing a computer game or messing around with a computer just to see what it can do. Girls, on the other hand, tend to want the computer to do something useful for them."

6. Do it again next year. "Set up a mentor system between older girls with more computer experience, and younger ones with less. Mentors ... become positive role models, and reinforce their own computer knowledge and confidence."

As a corporation, Apple seems to have a good record on issues of gender equity. The company deserves a round of applause for helping to publicize this important issue. Can you imagine IBM or Compaq taking a position on *any* social issue? *The Neuter Computer*, by Jo Shuchat Sanders and Antonia Stone (279 pages, softcover) is available for $26.40 (including postage and handling) from Women's Action Alliance, 370 Lexington Avenue, Rm. 603, New York, NY 10017. Copies of the brochure can be ordered from the same address. Price depends on the quantity ordered.

I am grateful to Jo Sanders for permission to quote so extensively from her work.

Why am I, a man, taking the time to write about this, when twenty new software packages are stacked around the desktop waiting to be reviewed? Because men are women's children. Because the disease of sexism has no place in personal computing, one of the last good, growing things left in our dying culture. Because right now, in school rooms all over the country, boys are shouldering girls away from the machines, or making them feel unwelcome in a hundred subtle ways. Think about it. □

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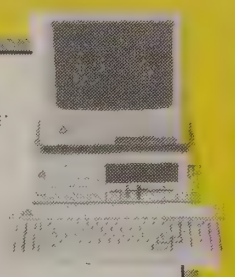

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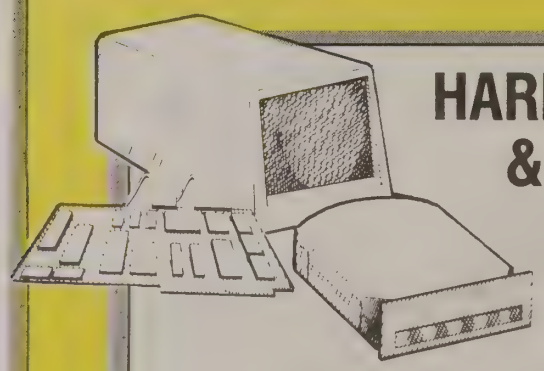

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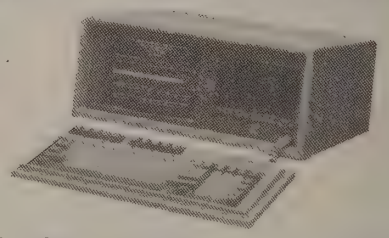

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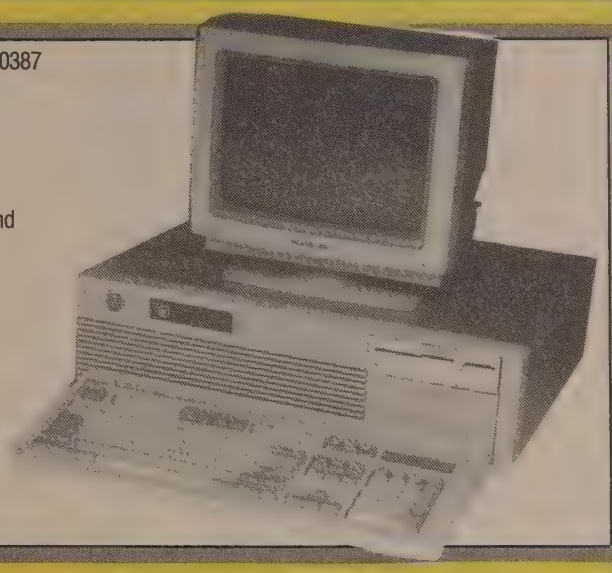

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REALIZABLE FANTASIES

By Jim Warren

Intellectual Shareware

"Let us stand on each other's shoulders, rather than each other's toes."
— Dick Hamming

This computer column differs from most. Its focus is on what has not yet been done, but should be, rather than on discussing the latest widgets or who's skewered whom. It's for entrepreneurs, eager-to-be-ex-employees, impending millionaires, and other agents of change — the dreamers and activists who convert the present into the future.

This column provides open information exchange. It continues the idea sharing that was invaluable to the development of megamonster mainframes in the '40s, and equally invaluable to the explosive growth of personal computing in the '70s. Such sharing was the essence of the multihour "mapping and random access" of the Homebrew Computer Club's legendary biweekly meetings — where multitudes of problems were candidly posed and numerous solutions readily shared.

Nowadays the Homebrew is mostly history, and some folks prefer patents to progress. However, many innovators remain inclined to freely share worthy visions. Send ideas to share to Jim Warren, Realizable Fantasies, 345 Swett Road, Woodside, CA 94062. Credit will always be given to the authors of published proposals, unless they request anonymity.

As an earned footnote: "Realizable fantasies" was a phrase for feasible futures, coined by Bob Albrecht at the old People's Computer Company.

A Debugging And File-Crash Recovery Tool

If you are a software or systems designer — or almost any serious computer user — you have often encountered both of the following scenarios:

Case 1: While debugging, testing or tuning a system, you need to perform the same sequence of complex interactions, over and over. This often involves a combination of keyboard input, time-sensitive actions or delays, mouse or pointer input, etc., ruling out use of a command file. It would be valuable to automate such interaction sequences.

Case 2: While you're working with a slightly-imperfect system (I've heard they exist...), some combination of user actions creates a malfunction. It may have an unclear, complex cause. It may also cause massive file scrambling, requiring extensive, expensive reconstruction from the last file backup.

For bug analysis, it would be valuable to have a record of the sequence of actions before the malfunction. For file repair, it would be utopian to automatically reproduce the many-hours action sequence since the last file-backup.

Solution: There could be an inexpensive I/O-stream recorder through which all input and output passes to and from user-controlled devices — keyboard, mouse, graphpad, etc. Both serial and parallel devices could plug through it to any computer. It could monitor all signals, recording them and their timing on a removable tape or disk (probably separate from the computer's mass stores).

Perhaps is should be called an Eavesdropper — or a Computer Interaction Annunciator (CIA).

For Case 1, the recording medium might be an endless loop of tape, long enough to store the longest interaction test sequence.

In Case 2, for bug analysis, the medium would need enough capacity to store all user interaction of one session. For automated file reconstruction, it would need to store user interaction from one file backup to the next — which, of course, all users perform daily...

Automated Scholarship Searches

If that's too technical for you, try this application, for which most readers probably have great empathy:

Data on the vast multitudes of available college grants and scholarships — and the unending variety of their requirements — could be made available for processing on personal computers. Support programs could "personalize" individuals' funding searches and data utilization. (Computerized scholarship and grant information services now exist, but most have the cost, inconvenience and lack of personalization inherent in mail-in questionnaires or institutional remote-query systems.)

Easily-identified "customers" range from high school counseling offices and post-secondary scholarship offices to computer-owning parents traumatized by college costs.

Such systems could include basic grant and scholarship information with multiple indices and search paths. Enhancement programs could provide highly interactive computer-aided search assistance, computer-prompted guidance in drafting effective funding applications, and even low-level expert systems providing advice regarding finance decisions.

Further enhancements could pursue more exotic academic and career counseling and testing, almost without limit.

Such systems could even automate the generation of funding applications, based on packaged application skeletons — at least until the granting institutions automated their recognition and rejection.

The cost-benefit analysis of a reasonably priced system is obvious for parents. Cost-constrained schools and overburdened counselors can also see their value. And, since information about grants and scholarships changes constantly, the database publishers would have a form of built-in copy protection and after-sale market due to the need for updates at least once a year.

This is an obvious application for computer CD-ROMs — large database, a mass user base, periodic republication.

Backyard SDI — A Hawkish Proposal

Starlings are irritating birds. Flocks of starlings are called communes. Larger groups are called commun-ers, and the largest hordes are called commun-ests.

Nowadays the Homebrew is mostly history, and some folks prefer patents to progress. However, many innovators remain inclined to freely share worthy visions.

Many Americans know that such communest hordes can take over entire neighborhoods, bombing them without warning. Such areas are then known as communest plots.

A high-tech defense system to keep backyards safe from invasion by these communest hordes has been suggested — the Starling Defense Invention, or "SDI." It consists of a microcomputer-controlled .22-caliber pistol mounted in a 3-axis motorized positioner with a CCD scanner and large lens known as the Big L-eye.

The Big L-eye looks for incoming birds, decides whether they are good birds or bad birds, and automatically shoots bad birds out of the sky. Since SDI systems are programmed by computer experts, they cannot malfunction malfunction.

Show your neighbors how safe they would be with SDI next door. Tell them how reliable computers are. Show them how computers can tell bad birds from good birds. Explain what happens to bullets that miss their targets — call it "new technology fallout." Tell them how a new SDI next door will be tested. Sell your friends and neighbors on SDI. (Variations on an idea from Steuart Bjornsson of American Data Cable, 916/622-3465.)

Finally, since neural networks have replaced artificial intelligence as today's computer fad, John also noted that "neural" is an anagram of "u learn." □

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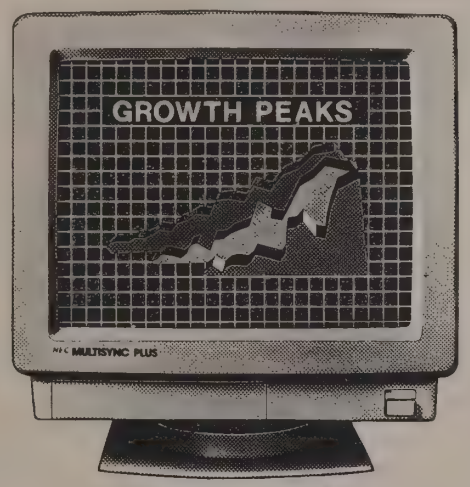

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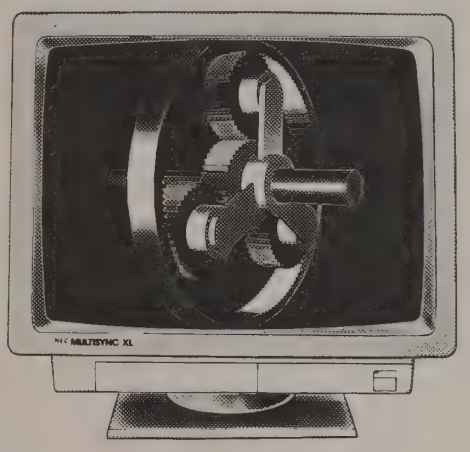

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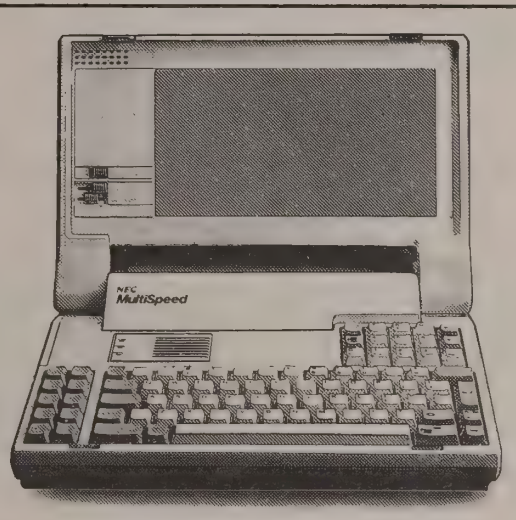

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9	3	RightWriter
10	4	Carbon Copy
5	5	FormTool 2.0
4	6	Paradox
8	7	Dac-Easy Accounting
7	8	Turbo C
–	9	Q & A
–	10	NewsMaster II
12	11	Lucid 3-D
14	12	Printmaster Plus
6	13	Quatro
11	14	Managing Your Money
15	15	MathCAD

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2	2	Direct Access
4	3	PC Tools
5	4	XTree Professional
3	5	Norton Utilities 4.0
6	6	Fastback Plus
7	7	LapLink Plus
8	8	Sideways
9	9	DESQview
10	10	Mace Utilities
11	11	Disk Technician +
14	12	XTree
13	13	Q Dos II
12	14	Print Q
–	15	pcANYWHERE

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5	3	Beyond Dark Castle
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8	6	Hyper DA
10	7	Managing Your Money
3	8	Superpaint
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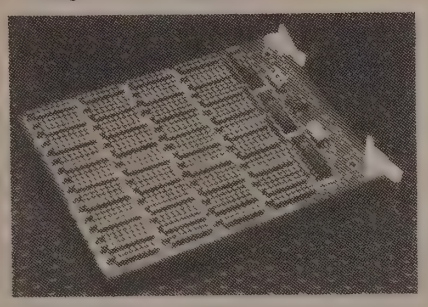

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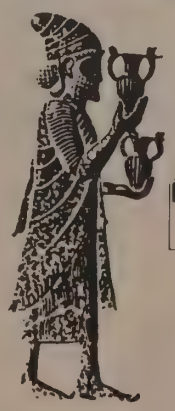

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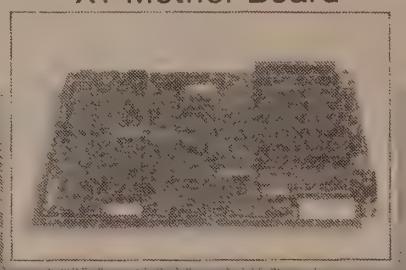

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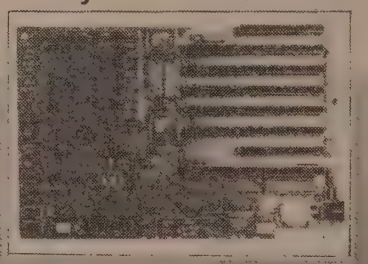

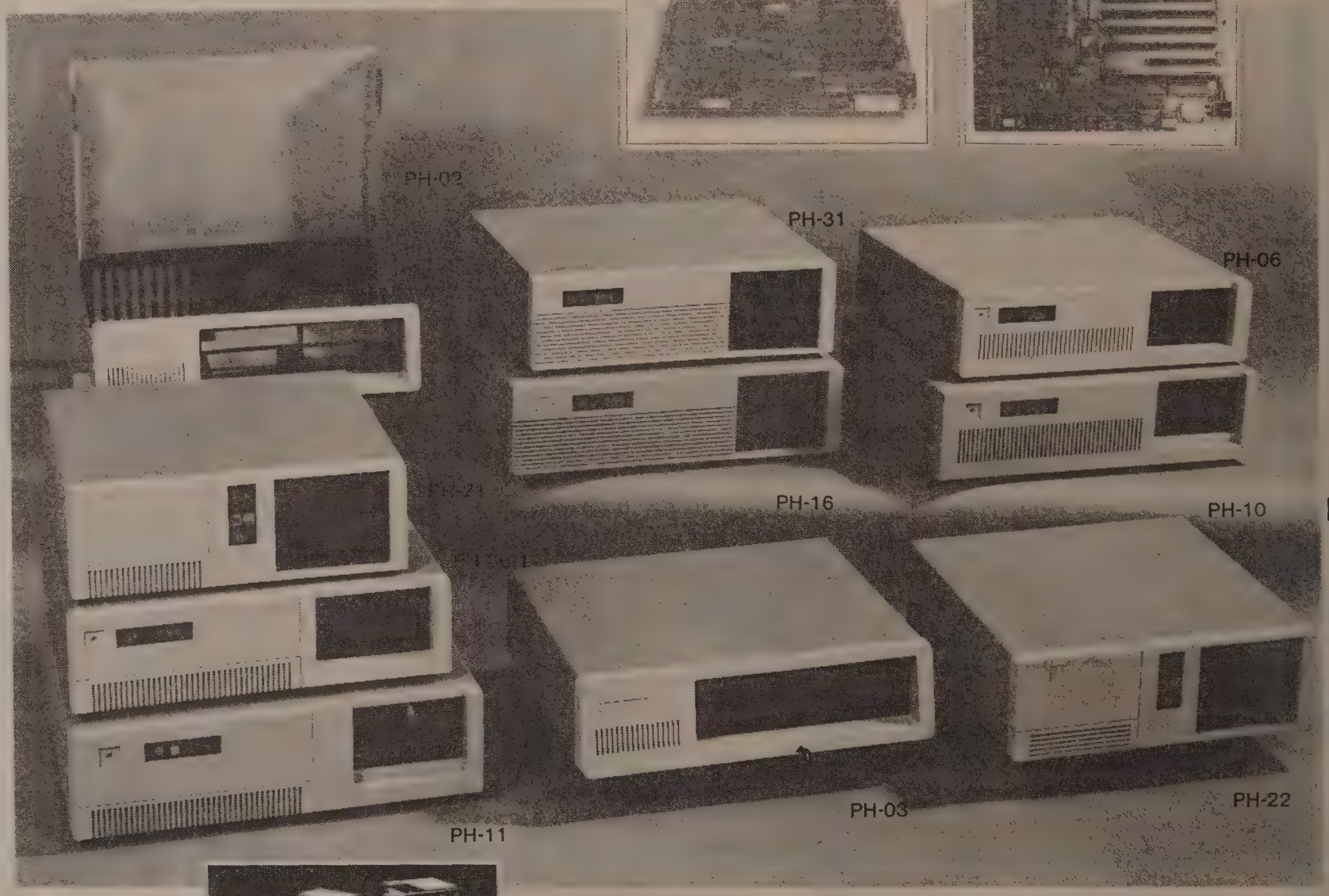

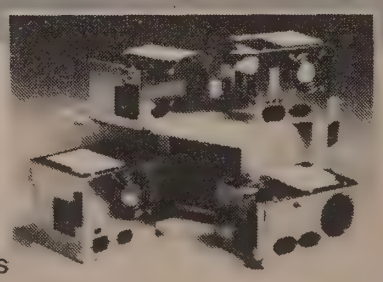

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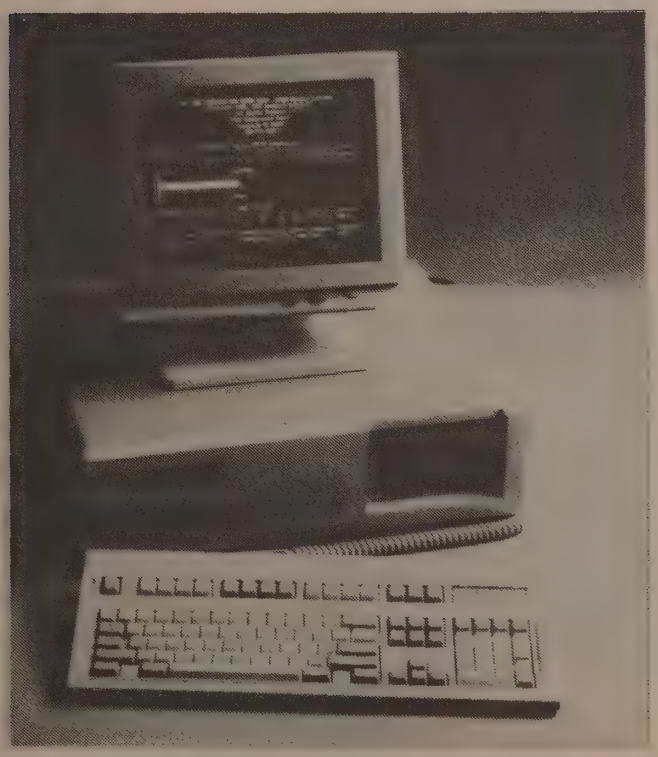

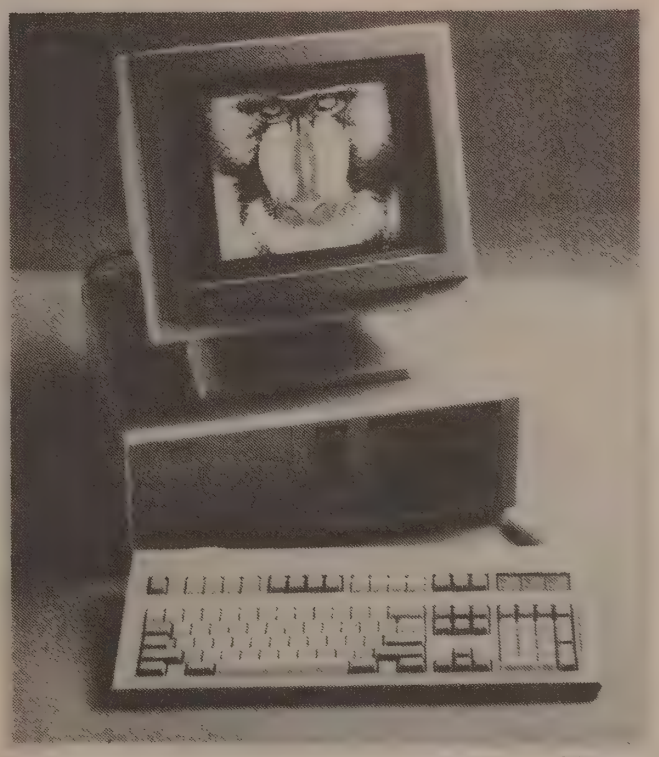

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QUARTERDECK

THE PEOPLE'S CHOICE

By Jeff Spurrier

In a hallway at Quarterdeck's Santa Monica offices, scores of newspaper and magazine clippings are taped to the wall. They date from last week and come from computer journals from all over the world: the Far East, the South Pacific, Latin America, Europe and America. All contain references either to Quarterdeck or its best-known product, *DESQview*.

"It's the most bedraggled wall," says Quarterdeck president Therese Myers, whose office looks out on the hallway. "But it serves a purpose. The odds were extraordinary from Day One, but we've done quite a bit. There are something like 900,000 copies out. That's no small feat."

It certainly isn't, especially when you consider Quarterdeck's competition in its chosen niche of multitasking, multi-windowing utility software: IBM and Microsoft, the two superpowers of personal computing.

While Quarterdeck has carved out a healthy respect for itself among both users and industry critics — with nearly 1,000,000 copies out, *DESQview* is obviously doing something right — it's not all smooth sailing ahead. For one thing, Microsoft's competitor with *DESQview*, *Windows*, has just released an upgrade that corrects many of the problems with previous releases. More significantly, there's OS/2 looming on the horizon, a typhoon-sized maelstrom of unknown potential and power, heading for shore with unseen compatibility problems, and boasting a built-in ability to duplicate some of *DESQview*'s most attractive features. And *Windows*, one must remember, comes from OS/2's developer and is compatible with the new system — unlike *DESQview*.

One might expect the view from Myers' desk to be somewhat bleak,

Quarterdeck president Therese Myers: "We went through a period where people didn't buy *DESQ* because they wanted to wait for IBM's *TopView*," says Myers. "But then it shipped and our sales started up again."

PHOTOS: © 1988 by Ann Summa

but instead she's decidedly upbeat. Sales are brisk, the demand for the company's new package of Application Program Interface tools is high, and this August, Quarterdeck is hosting its first developers' conference.

It's almost as if OS/2 didn't exist — although Myers is very glad it does. Ironically, for the second time in the brief history of the Quarterdeck, IBM has provided a window, as it were, of opportunity by its domination of the market.

EARLY DAYS

Quarterdeck began in 1981 when Myers and a small crew of her fellow workers at Citicorp decided it was time to branch out on their own. The IBM PC had just been announced; Myers and Gary Pope, Quarterdeck VP, co-founder and head of software development, decided they should try to do something for it.

They were hardly novices in software design — or hardware for that matter. In the late '70s, Myers, who holds a master's degree in industrial administration from Carnegie-Mellon, was given the job of developing an office automation system for Citicorp. It was 1977 and the idea of personal computers was just starting to emerge.

"We built the hardware and the software," she recalls with a laugh. "We didn't know any better. We wrote our own integrated software. We had E-mail, links, macro capability, word processing, film systems, calendar, phone messages, mail in and out. And if you wanted to see something on legal size paper, you just turned the screen sideways. It had a help key, wastebasket, cut-and-paste. Everything that you talk about now."

After building an initial 15 machines, Citicorp decided to mass produce the system, eventually selling thousands throughout North America, earning a ranking of second (behind Wang) in price performance from industry analysts. In the process, Myers learned one thing: despite the ever-expanding list of possibilities that computers promised, most users, both new and old, resisted change. Those who were computer illiterate had to be sold on "concepts" like word processing, while people already familiar with certain programs were reluctant to switch to new more powerful products.

"It became apparent in 1980 when people would tell me, 'But I like *WordStar*.' But how could they?" she says, shaking her head in amazement. "We've got a system with what-you-see-is-what-you-get, a screen that can be turned sideways. Then they'd say, 'I want a data base just like *dBASE*.' Then we understood that people couldn't give up what they had, so we had the idea for *DESQview*, which lets everything work together like (the Citicorp system) did. It lets you run whatever you like.

"We had been into workstations, but when IBM announced the PC we knew what we wanted to do — to let people pick and choose what they want. We had the idea for the environment back in 1980 – 81. We couldn't have done (*DESQview*) if we hadn't done this system first. This put it all together and had all the commands for every application uniform."

In 1981, Pope, Myers and two others began work with no budget out of an artist's studio in Santa Monica, tossing around ideas and gradually coming up with *DESQview*'s predecessor, *DESQ*. Like *DESQview*, *DESQ* was a multi-tasking, windowing environment program, but there the similarity ends. *DESQ* was written in an artificial intelligence language developed by Pope, a cross between LISP and Smalltalk. *DESQ* required 1.5 megabytes on a hard disk and 256K — the same demands of Microsoft's *Windows 2*. It was named "Software Hit of the Show" at the 1983 spring COMDEX, an accolade that brought in $5.5 million in venture capital. The product was released the following year in April, before the proliferation of cheap hard disks, which made *DESQ* primarily a power-user's product. Then four months later IBM announced its intention to develop its own multi-tasking environment: *TopView*.

"We then went through a period where people didn't buy *DESQ* because they wanted to wait for *TopView*," says Myers. "But then it shipped and our sales started up again."

Ironically, IBM's seal of approval on multi-tasking programs like *DESQ* provided a shot in the arm for Quarterdeck. Big Blue sold the concept in a way that the small company couldn't. And meanwhile, fearful of being shunted into a dead end non-standard siding, Pope and others began re-working *DESQ* to make it *TopView* compatible — thus *DESQview* was born. *DESQ* was translated from the AI language and its best features put into assembly language. Along the way, programmer's tools (now called API, application program interface) were incorporated.

"We added 'view' to the name to show it was compatible with that all-important product, the one that stayed on the market so long," says Myers, laughing. "But it was the best thing we've ever done, because it turned out the API (portion) was extraordinary. *DESQ* was a $399 product and *DESQview* was a $99 product. *DESQ* had a four-inch thick manual, *DESQview*'s is an inch thick."

Despite *DESQview*'s slimmed-down price, size and requirements (the program now needs 512K and two drives, although it runs best with memory boards or on a 386 machine), without two important inventions in the last few years, it's doubtful if the program would have achieved the popularity it has.

"Back in 1984–85, IBM announced what was then called DOS 5," says Myers. "It was to do two things: multi-tasking and running very large programs. Lotus had a release of 1-2-3 with a code size that was bigger than release 1A, and they had people with spreadsheets that were not going to fit inside 640K. So, much to their credit, they came up with the idea of enhanced expanded memory, which brought mainframe paging techniques down and added that to the spec.

"What that did for DOS was allow multi-tasking beyond 640K. It allowed programs that were larger than 640K. That was the first invention, and lately there's been another invention — a DOS extender for 386 machines. It allows people to write 386 protected mode programs, which can be as huge as they want and still run on DOS. With *DESQview* that means you can be running these gigantic programs side by side with DOS programs, take advantage of EMS as well as programs that were written so long ago they don't (use EMS). Both these developments lengthened the life of DOS. If you didn't have EMS to get around the 640K barrier or double EMS 4 to get around the multi-tasking, then you'd have to have a new operating system."

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THE ARRIVAL OF OS/2

Of course now we do have a new operating system in OS/2. But despite the hoopla, Myers doesn't think that poses a problem for Quarterdeck and *DESQview* (which will not run under OS/2).

"I don't think OS/2 is changing things at all, because the bulk of the machines out there are DOS machines," she says confidently. "It's just another option. (There won't be any effect) for a few years. There are something like 10 million 8086 ma-

chines, and people just aren't going to throw them away.

"A power user may get an OS/2 machine. It's like one of those fridges with an ice maker in the front. I'd love one but that doesn't mean I'm going to go out and get a new fridge — at least not until the one I have now craps out. Or it's like cars. General Motors built all these big cars. They were expensive and took a lot of gas but you could go really fast. That's like OS/2. It takes a lot of disk space, a lot of memory, and it gives you some power, but it costs a lot of money.

"DOS will be around for a long time. OS/2 represents an evolution of where software is going, but people will look at what you can do with it and see what it costs for memory, compatibility and upgrades of software. And then they'll see they can do the same thing in DOS. OS/2 is not a threat."

And just as *TopView* created an awareness of multi-tasking, OS/2 has made people hungry for that potential now, resulting in a number of outside developers looking to *DESQview* for spin-off applications. While Quarterdeck is working on OS/2 compatibility, they're taking advantage of its techniques for use in DOS.

"When we built in the *TopView* API (section of *DESQview*), it was (based on techniques) done by these mainframe programmers at IBM who understood inter-task communications, shared programs, spawning of subtasks, spawning of programs," she says. "That's all the stuff that's in OS/2. What's happening now is that as people are evaluating OS/2 and see what the techniques are, they're looking at *DESQview* and seeing that they can have a workstation of several programs and have the exact same capabilities. And because *DESQview* has menus that can be customized, they can easily make their workstations on DOS just like their workstations on OS/2. They can have work stations in OS/2 as well as DOS, doing the same thing.

"We've got a lot of companies now that are coming to us for developer's tools. OS/2 gave an appreciation for the capabilities inside *DESQview* that already existed, capabilities that we weren't even pushing. It was sort of a chicken-and-egg thing."

The demand for API tools started last year and resulted in Quarterdeck's recent release of five new programs (an assembly language reference, a C library, a debugger, a menu designer and a pull down menu designer). The upcoming developer's conference in early August is a direct result of this sudden interest in *DESQview*-specific spin-offs. Parenthetically, Quarterdeck's catalogue also includes "Quarterdeck Expanded Memory Manager" (for 386 and PS/2 machines), and "Companions I" (four memory resident utility programs — Link, Notepad, Calculator, Datebook).

WINDOWS VS. DESQVIEW

It's quite a full plate for a company whose niche is admittedly narrow. And specificity is by no means a guarantee of success. When *DESQ* first hit the stores, it soon had rivals in the form of Visicorp *Vision*, *TopView*, *Windows* and (to a lesser extent since it's not a true multi-tasker) *GEM*. And over the years it's come down to a head-to-head battle between Microsoft and Quarterdeck.

"The odds were just extraordinary," Myers says. There's Microsoft having signed up every OEM in the country. There was no one to sell to except retail. But my assessment was that *Windows* was slow. My assessment was that *Windows* was *DESQ*. It was big and it was slow. And in the initial version it wasn't running old programs, so I thought we had a chance.

On Microsoft and Windows:
"If you're competing in a normal niche, everybody has equal odds. Maybe somebody's a little richer but they don't have the blessing of IBM, the thing that says 'We are the future.' Well, maybe you say you're the future, but prove it. We're going to give you a run for your money anyway."

•"But they had so much money. We had money to live on but no money to promote or compete on the scale they could. Plus they had the IBM connection. If you're competing in a normal niche, everybody has equal odds. Maybe somebody's a little richer but they don't have the blessing of IBM, the thing that says, 'We are the future.' Well, maybe you say you're the future, but prove it. We're going to give you a run for your money anyway."

And that's just what Quarterdeck has done. They learned early on that one key to making it in the multi-tasking world came down to one basic issue: compatibility.

"There's not one standard, no two computers with the same hardware and software components," she notes. "And that was what was great about the computer industry — you could mix and match. If you wanted VGA, you got it. If you wanted Hercules, you got it. If you found some software that touched your fancy, you got it.

"We started doing compatibility (research) in 1983 and have been doing it ever since. I anticipate that people haven't begun to comprehend the (compatibility) nightmare that will come with OS/2. You have to get OS/2 from the hardware manufacturer and that's okay if you're talking about a pure computer, but it's not fine if it has 17 other bits and pieces — which in our experience is most of the time."

Compatibility was one of the early criticisms of *Windows*, she adds. The first release wouldn't run existing programs, a problem that has since been corrected. One might question the desirability of staying in old programs. True, habits are hard to break, but why not upgrade?

"Because you don't have a lot of money!" Myers guffaws. "Because you want to spend your money going to Hawaii! If you look at our registration cards you'll see we sell a lot to state and local governments. When it comes to individuals we sell to a lot of doctors. That's when I knew (who bought *DESQview*): people that don't want to spend money!"

Besides the initial inability to accommodate old programs, *Windows* was also noticeably slower than *DESQview*. While the recent release of *Windows* for 386 machines performs better, *DESQview* still has the edge. And there remains one glaring difference between the two that has not changed: adaptability to design.

"With *Windows* you're making this commitment you're buying into," says Myers. "You conceptually think through your problem, plan your program and design it (to fit). *DESQview* is backwards from that. You take what you've already done and make it work."

SELLING THE CONCEPT

While *DESQview* seems to hold all the cards in the multi-tasking game, the question remains for many users, Do I *really* need it? It's the same question that has appeared repeatedly in the computer industry. Each new "revolutionary" development has always been met with some hesitancy by the general user. And multi-tasking has a power-user's aura about it that scares some people away.

"It's like what we faced when we told people about word processing (ten years ago)," says Myers. "It's a concept sell. I think the fear of multi-tasking is still there to some extent, but you see a lot of situations where there's a dumb user who has always had *DESQview* and doesn't think anything of putting up their directory while running the word processor in the background. They think that's how a computer works. But once you take it away from people, they have

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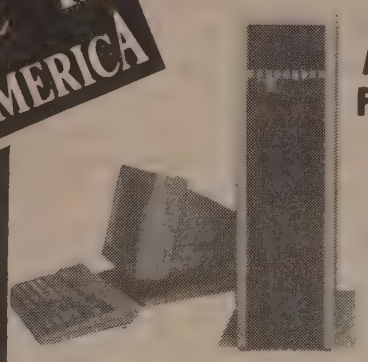

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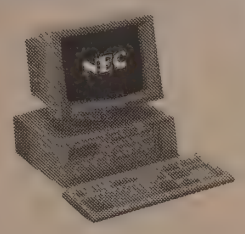

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"(The most important feature) is that it accommodates to anybody's habits. You don't have to conform to it. *DESQview* allows me to have a messy computer the way I have a messy desk. I keep my data base open all the time. I have 1,977 names of people I've had dealings with over the years in there. I also have a list of 167 things I have to do. If someone calls I can pop into the data base and take down the name, move over to *Paradox* for a report, get an idea and jump into the notepad, write it and move it into *Ventura Publisher*, and then, while it's printing, I'll go on to something else. I may have two notepads open at once. By the end of the day I may have seven windows open. Multi-tasking is not something you want all the time — just like windows. You just want those features randomly. The idea is that when you do want them, they're there for you. And once you're used to being messy, it's hard to be neat."

Of course there is another solution for the "messy desk" syndrome: integrated software, what Myers calls "the Swiss Army knife approach." However, there are two things wrong with most integrated packages: usually they are excellent in one area and poor in others — a great word processor but a shoddy notebook or a cumbersome calendar. And don't even dream of having a data base as massive as *dBASE* or a spreadsheet as powerful as *1-2-3*.

THE ULTIMATE SOLUTION

While obviously happy with the latest version of *DESQview* and its associated programs, Myers notes that there is still room for improvement — mainly in the field of memory.

"Something that a lot of our resources go into is trying to get *DESQview* out of that critical 145K," she says. "I'd love to find the magic that would get it completely out of the 640K on a standard 8086 machine (as is possible on a 386). With an EMS 4 board and CGA or monochrome, you can get it down to 0K or 10K. On EGA with 286 it's about 40K with an EMS 4 board or an AST double EMS board. The ideal configuration for *DESQview* is with two megs of memory with any EMS 4 board or double EMS board."

For many people who have purchased clone machines with extended memory, there's been a problem running *DESQview*, she concedes. That's because the memory is dumb. And, for a limited time, Quarterdeck is offering a solution for dumb memory — an All Charge Card that can be plugged into an AT class machine to transform regular clone non-smart extended memory into EMS 4 memory for multi-tasking. (The cost ranges from $200 to $260, depending on configuration.)

Quarterdeck's reliance on EMS memory is what prompted the company to hook up with AST for two years in a bundling deal that had the program going out with various AST boards. While Myers says it was a good strategic move at the time, the deal is now over.

"If you look at our registration cards you'll see we sell a lot to state and local governments. When it comes to individuals we sell to a lot of doctors. That's when I knew (who bought DESQview): people that don't want to spend money!"

"I think it's important to be the one supporting the product," she says. "It's better to have people buying the product and recognize the value of it rather than have it being given away. There's a psychology there that's important. There's an article on the wall out there that talks about the federal government being the largest owner of *Windows* products — but of course they're all sitting in a government warehouse somewhere. That's not what you want."

It's certainly not what she wants. And until some must-have program emerges for OS/2, it seems likely that *DESQview* will be sitting just where it belongs — nestled quietly in the memory of nearly 1/10th of all the PCs running. The two QEMM (Quarterdeck Expanded Memory Managers) products which shipped last year both incorporate the upgraded LIM-EMS version 4.0 memory spec (making them essential add-ons for 386 machines or the new IBM PS/2 machines with their bank-switching architecture). With a foot securely in the door of the new world (if not the operating system), it looks like Therese Myers may have to start looking for another blank wall to fill. (Quarterdeck, 213/392-9701.) □

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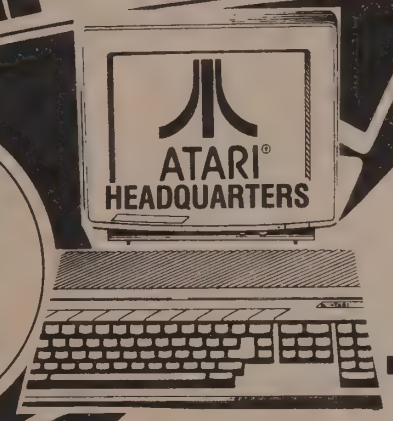

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Computer-Assisted Music

Intelligent Music's Graphical Interface Makes It Easy

By Warren Sirota

The time: ten minutes into the future. The place: your living room. You turn on the stereo system, but instead of putting on a record or a CD or a tape, you turn on the Miraculous Music Maker. The buttons on the front panel light up. Because you had a hard day at work, you press the button marked "ahhh...", bypassing the other buttons ("urgh!!", "YAY!", and "Oh?!?" among them). Or perhaps you choose to mix a little Oh?!? with your ahhh...Music begins to drift out of the speakers, different music each time, taking you where you want to go.

Okay, now count to five and wake up. This scenario is far-fetched, but the idea of using powerful personal computer-based tools to make music on the basis of high-level constructs is not far-fetched at all. In fact, it's here now. And although many of these tools are languages which require a high degree of commitment to learn and use, there are also graphically-oriented programs which run on Macintosh and Atari computers to make some of these techniques accessible to a broader range of users. I'm going to describe three programs available from Intelligent Music, called *Jam Factory*, *UpBeat*, and, enigmatically, *M*. All of these products give you high-level control by asking you to think of music as repetition with variations.

Repetition is one of the most important elements of music. Rhythm could not exist without repetition, and tunes could not be made to stick in our conscious or subconscious minds without it. And what are computers good for? Repetitious tasks, right? It sounds like a perfect match, and musicians have not been slow to catch on.

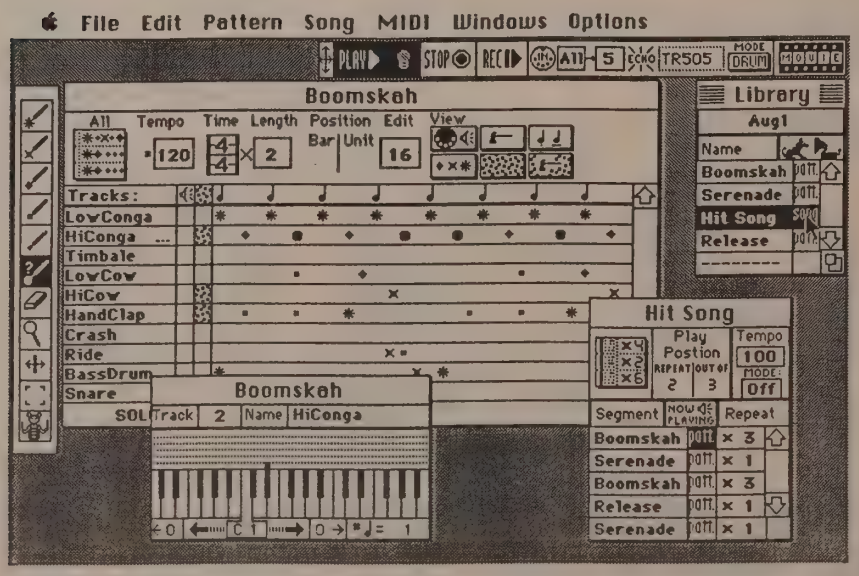

FIGURE 1:
UpBeat's main screen. The set of tools on the left includes a variety of mallets which you can use to place hits on any of the beats or subdivisions of the beat shown in the main pattern window (called Boomskah).

But in the process of doing so, they, and their discerning listeners, have discovered a horrible truth. If repetition is performed in a literal, machine-like fashion, all the life can easily be drawn from the music. When humans play, each repeat has some variation to it, whether intended or not. It is impossible to play the same note in exactly the same fashion at the same rhythmic point (down to the millisecond or so) twice, let alone time after time. And now that we have machines that can repeat mechanically, it turns out that such repetition is undesirable.

So what do we do? It's ironic that a primary ingredient in getting an acceptably humanized pattern out of a machine is to program in distortions or perturbations. If you have a snare drum that's supposed to hit on beats 2 and 4 of every measure, for instance, make it hit a little before beat 2 sometimes and a little after beat 4 sometimes. Not enough to vary the rhythm, but just enough to counter the deadly boredom of utter monotony. And while we're at it, let's have it hit a little more loudly sometimes than others.

Unfortunately, this kind of subtle distortion is difficult to accomplish with most "traditional" sequencer programs. Such programs, which are like tape recorders for the MIDI messages that control synthesizers, make it easy to program repetition, but impossible to program variation. Intelligent Music's programs are designed for just such tasks.

UpBeat

UpBeat is a drum machine programmer; i.e. a program that sets up patterns for drum machines to play. All drum machines have built-in facilities for building drum patterns, but these facilities are much improved upon when they're removed from the drum machine and placed in the computer. This is because:

1. You can sometimes run out of memory in the drum machine and have no place to put your pattern without erasing a different one.

2. It is much easier to manipulate patterns through a full-screen graphical interface than through a 16-character by 2 line LCD display.

3. Sooner or later the battery in the drum machine is going to give out and all of your patterns will disappear, losing many hours of work.

UpBeat fixes all of these problems, and more, by allowing you to introduce random variations not possible with the drum machine's own sequencer.

Figure 1 shows *UpBeat*'s main screen. The set of tools on the left includes a variety of mallets which you can use to place hits on any of the beats or subdivisions of the beat that are shown in the main pattern window (called Boomskah). Each of the mallets creates a strike with a different MIDI velocity, producing louder and softer hits. And, in fact, each mallet can be set up to produce a hit with a slightly different intensity each time it's played; you can also use a purely random mallet.

UpBeat also allows you to program drum fills (fast drum licks which usually come at the end of musical phrases to kick up the energy level for the next verse) allowing for random variation.

All of the patterns that you create are stored in the library, which also stores the songs that you create by stringing together the patterns.

When you're done setting up the drum patterns for your songs, you can make a "movie" of the performance and save it to a MIDI file. Since movies and MIDI files are an

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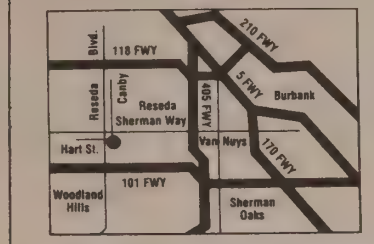

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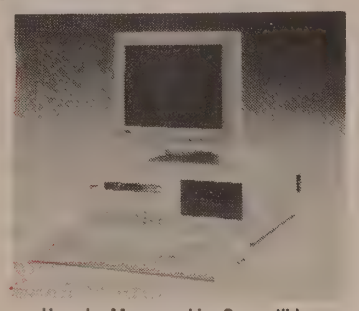

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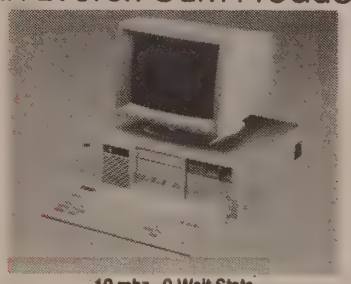

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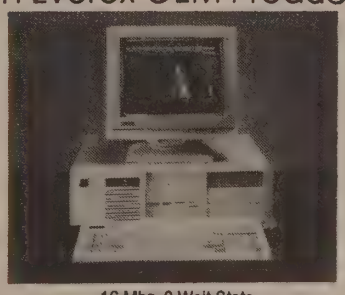

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important part of the Intelligent Music concept, let's take a moment to discuss them.

Movies And MIDI Files

Just as ASCII (or text) files are the lowest common denominator for transferring text files among a number of different programs which may have different uses for them — such as word processors, databases, and outline processors — so MIDI files are a common format that MIDI programs can use to exchange information. The actual format is too technical to go into here, but we can say that it consists of certain standardized header information followed by timing information and MIDI codes. The format was developed by Dave Oppenheim of Opcode Systems, another well-known MIDI software manufacturer, and has caught on as a de facto standard, although it is not part of the official MIDI specification.

Many sequencer packages support this format, including OpCode's *Sequencer* 2.5. Unfortunately, one of the most popular sequencers, Mark of the Unicorn's *Performer*, does not yet understand MIDI files. Rumors abound, however, that a program exists that can convert between *Performer* and MIDI file formats.

Intelligent Music fully supports the MIDI file formats. All of these products allow you to create "movies" of your performances, which are simply sequencer-type recordings of all the timings of all the MIDI messages that were sent to your synthesizers. Then, these movies can be saved to disk as MIDI files, to be read either by another of the Intelligent Music programs or by any other programs that understand the format.

To the hacker's delight, Intelligent Music goes a step further in its support of MIDI files. Not only do all their products include a full definition of the MIDI file specification, but they also contain sample code to help the homebrew coder to process these files.

M

The easiest way to understand *M* is to forego description and jump right into an example, or thought-experiment. *M* contains four "patterns," which can each contain a set of notes or chords. When you start up *M*, all the patterns are empty. You have to feed them before *M* will do anything. (See Figure 2.)

So you set pattern 1 to record, and you play a couple of dozen notes on your controller (keyboard, guitar synth, wind controller, or MIDI drum pads). Then you click on the Play button and you hear the notes you played come back out, only they're different. First of all, the rhythm is totally regular, all quarter notes, regardless of how you played in the notes. Secondly, the accents are also different — every 4th note is accented. Something strange has happened.

In fact, the notes that you played in are nothing but algorithm fodder for *M*. The timings and the velocities are all gone, to be filled in by the program in varying ways that you control from the computer screen. The timings have all turned to quarter-notes, which can be altered by changing the numbers under the icon of the clock in the "Patterns" window. The accents are controlled by the "cyclic variable" for Accents. The default, shown in figure 2a, is that the first note in every group of four is accented. Figure 2b shows a setup where the first and third notes in every group of five is accented, with the first note getting either the highest or second-highest accent level and the third note getting a medium accent.

This starts to give a flavor of the music that is natural to produce with *M* and *Jam Factory*. Think of streams of pulsing notes or chords, which can move along at fast or slow rates with precise mathematical interrelationships, where each note can have accents that vary with some randomness within a range that you can control rather precisely. *M* provides several ways of introducing more complex rhythms (as opposed to just pulses) — either by using the Note Density variable to cause silences to be interspersed with the pulses, or by using the Rhythm cyclic variable.

The other main variations that *M* will provide for you in a random yet controlled manner are Legato, Note Order, Transposition, and Time Scaling. Legato gives you control over how long each note is held. Since it's a cyclic variable, you can set up repeating patterns of Legato variation with each step having its own range of choices. Note Order allows you to tell *M* to play back the notes that you played in a fully- or partially-scrambled order. Transposition is a variable that is used to transpose each of the four patterns independently. Time scaling lets you add subtle and not-so-subtle temporal variations that fall outside the pale of the regular rhythms that *M* would otherwise tend to produce.

We've touched on many of the basic features of *M*, but not their use in a performance context. *M* is set up to let you store six of each of a lot of things — pattern sets, transposition schemes, note densities, etc. — and to switch among them with a click of the mouse. When you find a set that you like, you can take a "snapshot" of all the settings at once and save it (to a position on the right side of the screen). This allows you to retrieve an entire group of settings with a single click. You can even quantize the snapshot retrieval so that it happens on the beat, or at the beginning of the next measure, instead of at the instant you click.

I found the snapshot feature to be extremely useful for a live theater scoring project. I want one section of music to play underneath the first part of a speech, a second to play under the second part, etc. The music is designed to be tightly tied in to the speech, but the timing of the speech cannot be expected to be identical night after night. *M* makes the performance of this music easy, by letting me click on snapshot A at the beginning of the speech, on snapshot B at the cue for the first transition, then snapshot C, and so on. Since I've set up the transitions to always be quantized to the beat, it can't sound awkward if I don't hit the mouse at precisely the right instant.

M has two other recording facilities: Slide Shows and Movies. You already know about movies, which are used to create MIDI files. A slide show is a sequence of snapshot clicks and variable clicks that can then be replayed.

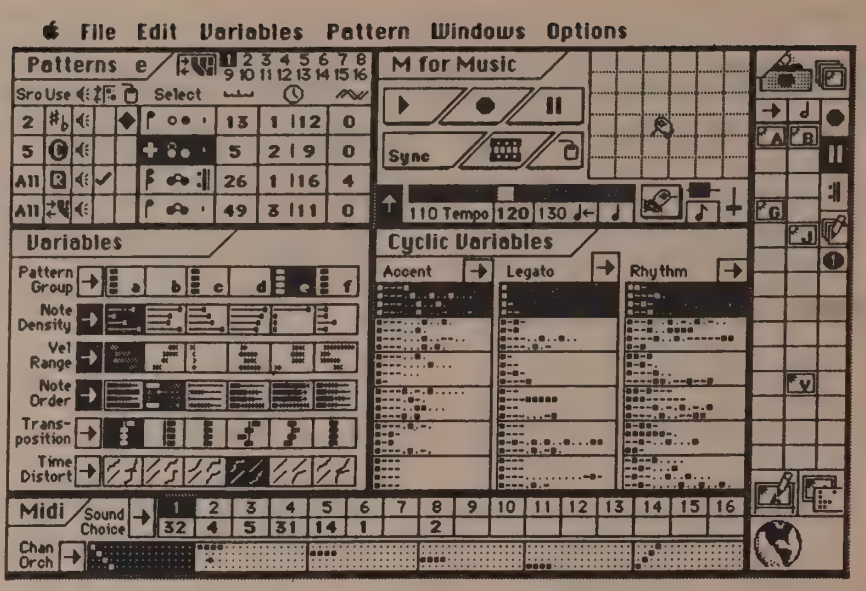
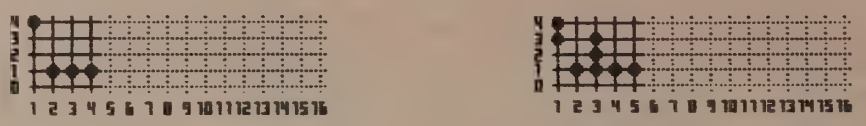
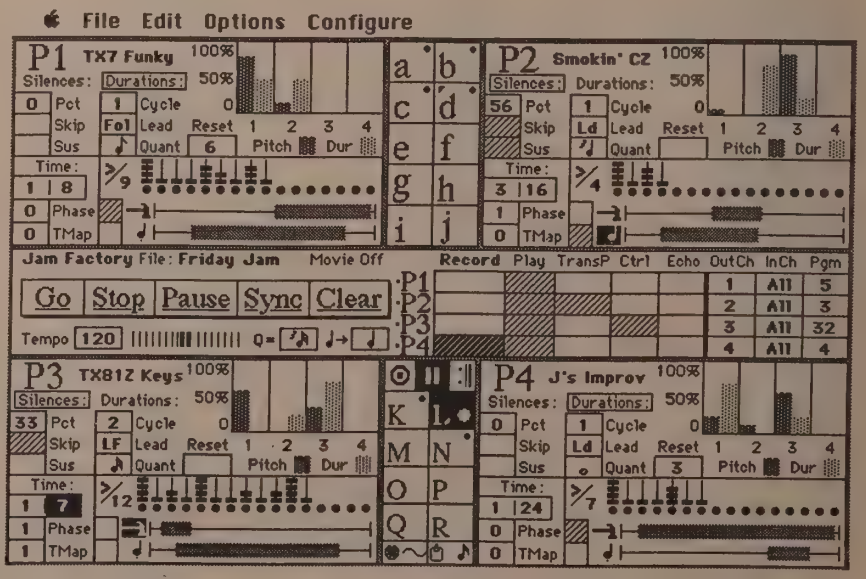


Figure 2: M contains four "patterns," which can each contain a set of notes or chords.



M's default, shown in figure 2a, is that the first note in every group of four is accented. Figure 2b shows a setup where the first and third notes in every group of five is accented, with the first note getting either the highest or second-highest accent level and the third note getting a medium accent.


File Edit Options Configure
P1 TX7 Funky
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Jam Factory File: Friday Jam Movie Off
Go Stop Pause Sync Clear
Tempo 120
Record Play TransP Ctrl Echo OutCh InCh Pgm

Figure 3: Jam Factory is quite similar to M. However, it has four "Players" instead of four "Patterns."

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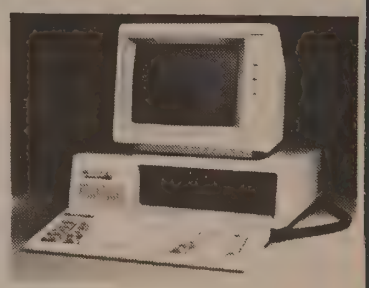

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M also has a "conductor" facility, which allows you to tie any of the variables to a conducting baton that moves through a grid in the upper right-hand corner of the screen. This allows you to select, for instance, pairs of variables which will move together. I have yet to find this facility of much use, however, because of the near-immediate accessibility of all variables onscreen.

Jam Factory

Jam Factory is quite similar to *M*. It has four "Players" instead of four "Patterns," but it still allows you to play music into each of the players and control accents, legato patterns, rhythms, note densities, etc. (See Figure 3) In some ways it is more limited than *M*, in some more sophisticated.

In the area of limitations, the primary one is that *Jam Factory* does not have 6-position variables. So, instead of six sets of four patterns that can be in M at once, we only have one set of four Players available in *Jam Factory*. Instead of being able to click on a single box and have all accent patterns change at once, as in *M*, we have to change them one at a time in *Jam Factory* (unless we do it in the context of a movie, where there's a technique for handling this). Also, *Jam Factory* doesn't have the conductor facility.

Sequencers, which are like tape recorders for the MIDI messages that control synthesizers, make it easy to program repetition, but impossible to program variation. Intelligent Music's programs are designed for just such tasks.

In the area of increased sophistication, *Jam Factory* has two extremely nice features. The first, which is one of my favorites, is called Scale Distortion. By setting up a scale distortion map, you can transpose your original input into any key. This is far from the simple "transpose all notes up a fifth" — it can actually transpose different notes by different intervals, so that your pattern can first be heard in F# major, then in C harmonic minor, then in any scale of your own design. The actual triggering of the transposition occurs when you play a note on your keyboard in "Control" mode. (Both *M* and *Jam Factory* have this mode, where many program functions can be controlled directly from your keyboard).

The second advanced feature of *Jam Factory* is its use of transition tables to randomize the notes and durations of your input. Whereas *M* provides three ways of randomization — none, cyclic, and totally random, *Jam Factory* uses a more sophisticated algorithm which uses statistical techniques to create melodies that are similar but not identical to the ones that you played in originally. You can, to some extent, determine the degree of similarity that you desire.

Summary

Music offers infinite possibilities, especially when computers can be used to remove virtually all physical limitations. Over the centuries, various forms and conventions have evolved to help give form and structure to these possibilities. The programs from Intelligent Music lend their own structure to the possibilities of music, and it is an original and productive one.

You cannot use these programs to produce any type of music that you can conceive, as you could, theoretically, with a general-purpose sequencer program. However, the programs excel at helping you create rhythmically sophisticated pattern-based musical structures which can be used effectively in the contexts of New Age, rock, minimalist, and Indonesian gamelan-influenced musics, as well as doubtless many other forms. The programs can even be thought of as musical productivity tools, allowing you to create substantial pieces of music without requiring much in the way of performance technique or lengthy editing of sequencer data. What is left for the musician to exercise in using these products? Not much — just imagination, taste, knowledge, orchestration, and devotion. □

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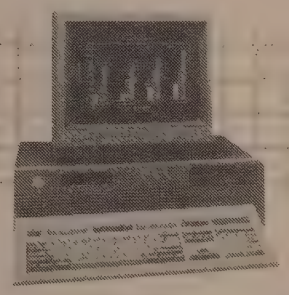

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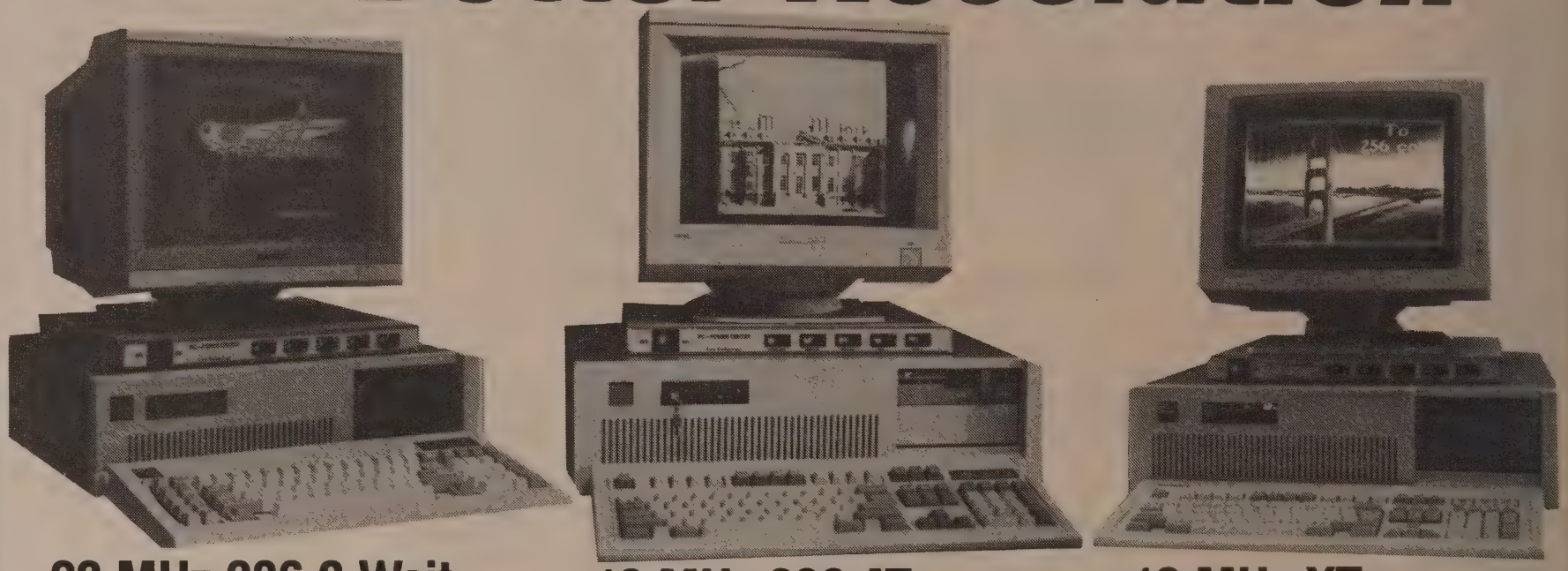

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Visual Aurals: A Light Show On Your Amiga

By Ben and Jean Means

Visual Aurals lets you create ever-changing onscreen animation driven by music.

Jean Michel Jarre, international jazz star, is spending five million dollars on a single night of light and sound in Tokyo this fall. Lasers, optical discs, and the Fairlight CVI will compete with fireworks and spotlights to barrage the entire city with spectacular technology. Amid all this extravagant high tech, Jarre will perform against five giant backlit video screens...generated on a Commodore Amiga with *Visual Aurals* ($169).

Does real time animation on your personal computer in response to music input sound too good to be true? That's what we wondered as we hooked up the Visual Aurals Music Animation System to our Amiga and put *Dark Side Of The Moon* on the CD player. As multicolored shapes began zipping about on the Amiga monitor, we sat entranced, watching the sound of music.

No other personal computer has a program like *Visual Aurals*, which reacts to sound to create a flowing stream of art; it's a kaleidoscope gone berserk in time to the music. Remember the color organs in the late '60s and early '70s? Those cute little boxes with little lights that flashed on and off in response to the music? They were cute, trendy and after two or three songs, deadly dull in their sameness. Mark Adams and Dan Egolf remember, and they've brought the color organ concept to the Amiga with *Visual Aurals* 1. And to keep things interesting, they created literally trillions of different ways that the Amiga can draw real time animation onto the screen in response to music.

The result is a psychedelic array of colors and shapes pumping and oozing about the screen in time to the music. In the constantly changing Evolve mode, the user can slap on a CD or tape and sit back to watch the music play in an ever-evolving series of kaleidoscopic visuals.

The Fairlight CVI ($10,000) was one of the first semi-affordable computer-driven light shows, but with a few cables, a backlit video screen and a projector, *Visual Aurals* runs an ever-changing light show on the Amiga that night clubs, rock groups, cable channels or even MTV-wearied music lovers can afford.

Visual Aurals combines the Mindlight 7 hardware with custom software to create 2D animation in real time. You input sound through the Mindlight 7, a circular device which plugs into the #2 mouse port and has its own built-in microphone, as well as a stereo mini-phone jack. There are three controls on the Mindlight: microphone gain, overall gain and visual bias level. Since both the mic and the overall gains are always active, sound input can come from either mic or line level sources, or from both simultaneously. The visual bias level acts as a noise gate to filter out unwanted low level sounds.

The Mindlight covers the Amiga 1000 expansion bus, so if you're using a 1000 with expansion devices or an A500 or A2000, you'll need a joystick extender cable to connect the Mindlight to your Amiga. We'd recommend this even if you have an A1000 without expansion devices, since getting the Mindlight away from the Amiga helps insulate it from Amiga noises like the thwock of QWERTY keys and the hum of the cooling fan, both of which create visual responses that have little to do with any musical input you might be using.

Once you've gotten sound into your Amiga through the Mindlight, the *Visual Aurals* software takes over. You trigger visuals from one of four Mindlight channels: 1) bass and treble intensity, 2) overall intensity and frequency, 3) bass intensity and frequency and 4) overall and treble intensity. Channel 1 is the most useful for pop and rock, while classical music tends to get the best visual response from channels 2 or 4.

To set proper input levels, *Visual Aurals* has an oscilloscope-style display which shows the input levels to the current channel. Slap a good disc in your CD player, adjust the scope for maximum response without clipping, and you're ready to start generating some mind-blowing visuals. The quickest way to get an idea of the system's capabilities is to put Viz in Evolve Mode, which continuously changes the settings, resulting in hours of never-repeated animations.

Once the Evolve Mode has whetted your visual appetite, you can start slogging through the 113-page manual to find out how to create your own visuals from scratch. Some functions are available from pulldown menus, but since the sight of pulldowns would mar your visual performance, Viz is optimized to use QWERTY keyboard input.

The main function types are Vistas, Visuals, Faders and Modifiers. Vista is the function which determines how IFF (Interchange File Format) pictures are displayed; it supports all Amiga graphic modes except Halfbrite and can use overscan resolutions of 352 x 240, 352 x 480, 704 x 222 and 704 x 480. *Visual Aurals* can import pictures from other IFF graphics programs and use them as foregrounds, backgrounds and also as matte "masks" to reserve specific screen areas for animation or video.

Visuals are the basic animation patterns that the versatile Viz uses to put animations on the screen; *Visual Aurals* calls the two options Mozai and Kolai. Mozai visuals create flowing wavelike patterns using one of eight simple shapes. Kolai visuals use geometric forms or IFF brushes to paint the screen or to reveal the background pics.

Just like their name, Faders specify how the Visuals can be faded out after they're drawn. And finally

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You also have three palettes on call at all times, picture scrolling and bit splitting. Bit splitting combined with scrolling is an awesome effect that has to be seen to be believed.

Once you find a visual you like, you can save it as an Environ, with 10 environ settings available at all times for instant recall. This allows you to orchestrate a Viz animation session with ease. If you want to create a really grandiose production, you can create a tagged datadisk with up to 100 files each of Environs, Pictures, Brushes, Sprites and MIDI files.

did on purpose and have the vision to use an unplanned accident, *Viz* will keep you entertained for days on end. We know. We cursed the manual. We cursed the help screens. We cursed the onscreen help. But we kept booting the thing up and creating instant real-time animation that no animator this side of Disneyland would ever attempt.

For rock bands, club owners and local cable channels, *Visual Aurals* has great potential to help entertain and amuse their clientele. But be forewarned, as it says on page iii of the manual, "The real time animations are Copyright 1987 Visual Aural Animation. This copyright applies to any animation created by

We hooked up the Visual Aurals Music Animation System to our Amiga and put Dark Side Of The Moon on the CD player. As multi-colored shapes began zipping about on the Amiga monitor, we sat entranced, watching the sound of music.

Viz has a MIDI sequencer that can record up to 2500 notes with mouse control over pitch, modulation, tempo and transposition. It uses the 0.02 MIDI file format from Opcode and can also read SMUS files.

Powerful, Yes. But That Learning Curve...

You begin to get the idea of how enormous the possibilities of this program are. But there is a catch...the learning curve. Viz is radically different from any personal computer paint or animation package, and uses some pretty arcane lingo to describe its workings. The manual is painfully unclear at times; since it has no index, finding the one bit of information you need can resemble a scavenger hunt at times. There are nine help screens which help a bit, and onscreen help which adds even more, but they don't change the fact that the size and complexity of this program is somewhere between the Chrysler Building and the Starship Enterprise.

If you're a committed Control Freak who wants every "i" dotted and "t" crossed, stay away! But if you're not afraid to make mistakes that look better than the things you Visual Aurals with the exception of those animations which solely use custom Brushes with custom Pictures." If you don't meet the exception criteria, be sure and get written permission from Visual Aurals before you proceed.

Conclusions

In almost every culture, there is a tradition of combining visual and musical performance. From the African drum troupes to classical opera to the spectacle of the modern rock concert, musicians and artists have joined forces to entertain. Yet, too often we sit down to listen to an album while staring at the wall. *Visual Aurals* provides a solution to this in the form of 2D animation on your Amiga screen that moves and changes in response to music.

Never before has it been so easy to align sound and visuals...or so much fun. *Visual Aurals* is more entertaining than most prime time TV, more startling than lasers when exploded across a giant video screen ...and quite a backdrop for Jean Michel Jarre. (Visual Aurals, P.O. Box 4898, Arcata, CA 95521, 707/822-4800.) □

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A Different Kettle Of Fish: Sun's 386 Machine

By Bennett Falk

In April Sun Microsystems introduced the Sun 386i. Based on the Intel 80386 microprocessor running at 20 or 25 MHz, the 386i is the latest entry in the workstation sweepstakes, and it will undoubtedly raise eyebrows and lower bank balances before it vanishes over the horizon.

Pitfalls

The 386i represents a new phase in Sun's campaign to compete directly with the high-end personal computers (such as the Compaq 386, the IBM PS/2 Model 80, and the Macintosh II) that are invading the workstation market. (If the PC/workstation distinction is wasted on you, try to pick up a copy of Walter Zintz's workstation article "Can You Afford a Workstation Yet?" in *UNIX World* March, 1988.)

The first blows in this campaign were struck more than a year ago when Sun cut the price of its Motorola 68020-based 3/50 workstation to $5,000. This made the 3/50 affordable for a much wider audience, but it also revealed two pitfalls workstation manufacturers face in competing with high-end personal computers.

One pitfall is simply a distribution problem. For most of its corporate life, Sun has maintained its own sales force and relied relatively little on "value-added resellers" (VARs). With the price cut, the 3/50 was close to becoming a high volume item, but there was no dealer network in place capable of supporting large scale distribution to end users.

The other pitfall is simply that the 3/50 and its successor, the 3/60, could not provide DOS compatibility. DOS compatibility is just about a necessity in the business/technical workstation world. Computer manufacturers are discovering that success depends as much on a smooth "migration path" for entrenched DOS applications as on performance.

In its larger models, Sun managed DOS compatibility with board-level components based on Intel processors, but the 3/50 and 3/60 were single board computers with no way to accommodate PC/AT compatible cards.

While the reduced prices on Sun's 3/50 and 3/60 created a publicity stir and excellent bargains for Sun's existing clients, price cuts alone were not enough to bring the company into any new markets.

Something New

The 386i, however, is something else again. In the first place, Sun will market the machine through VARs as well as through its traditional sales force. While it's unlikely that the 386i will appear at your neighborhood computer store, the new computer will be much more "available" than its predecessors have been.

Copyright © 1988 by Bennett Falk. Bennett Falk lives in the Bay Area and works for Sybase, Inc. He writes whenever he can and hopes for the best.

Computer manufacturers are discovering that success depends as much on a smooth migration path for entrenched DOS applications as on performance.

Table 1: CPU Intensive Tests:

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	(All times in seconds)	
Sieve 100 iterations, 1899 primes.		
Real	11.3	6.2
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System Call Test		
Real	2.45	1.75
User	0.26	0.08
System	2.08	1.44
Loop Test		
Real	2.06	1.02
User	1.9	0.92
System	0.03	0
Function Call Overhead		
Function Call		
Real	0.35	0.19
User	0.2	0.1
System	0	0
Assignment		
Real	0.19	0.10
User	0	0
System	0	0
Overhead	0.16	0.09

The 386i is also a fascinating machine technically. It is emphatically *not* an AT clone. The machine is designed from the ground up as a UNIX machine, and in fact it is the first Intel-based computer to run a version of Berkeley UNIX. Other UNIX products for Intel-based machines have been derived from AT&T UNIX.

Specifications

There are two models of the 386i: the Model 150 featuring a 80386 CPU and 80387 co-processor running at 20 MHz, and a Model 250 with the same chips running at 25 MHz. The Model 150 is rated at 3.0 MIPS (millions of instructions per second) and the Model 250 at 5.0 MIPS.

Both models feature a single board computers in which CPU and coprocessor as well as controllers for Ethernet, Direct Memory Access, and peripherals are integrated on a single system board.

The Model 150 comes with 4MB RAM, the Model 250 with 8MB. Either model may be expanded to a maximum of 16MB RAM. The Model 250 feature a 32K memory cache. Both models use a 32 bit bus that operates at the native CPU speed. A slower, four-slot PC-AT compatible expansion bus is also included.

Either model is available in a diskless configuration for use with a file server. For standalone use, hard disks ranging in size from 91 MB to 327 MB are available. The machine is small enough to fit on a desktop, but is probably best placed out of the way on the floor nearby.

Standard equipment includes a 3.5" disk drive, a 107 key AT-compatible keyboard, and an optical mouse. Color and monochrome monitors of various sizes and resolutions are available.

SunOS release 4, which merges features of UNIX System V.3 and BSD 4.2/4.3, is bundled with the system, as is VP/ix, which provides DOS 3.3 capability. The visual presentation in the Sun windowing system is clean and easy to read.

These machines are not cheap. A diskless Model 150 with a small (12-15") monochrome monitor is priced at $7,990. A fully loaded 150 with hard disk and 19" color monitor is priced at $14,990. Prices for the Model 250 range from $13,990 to $19,990.

DOS Performance

The 386i provides access to DOS services and applications through VP/ix, a product of Phoenix Technologies that is bundled with the Sun Operating System. VP/ix allows users working on the 386i's bit-mapped console to run "any reasonable number" of DOS windows, each of which behaves like a PC, without interrupting regular UNIX operation. Many UNIX commands can also be executed from the DOS windows,

Table 2: Disk Intensive Tests

	(Compaq 386)	(Sun 386i)
Disk Write		
Real	0.44	0.53
User	0	0
System	0.28	0.38
Disk Read		
Real	0.44	0.59
User	0	0
System	0.26	0.19
Pipe Test		
Real	1.41	1.54
User	0	0
System	0.6	0.78

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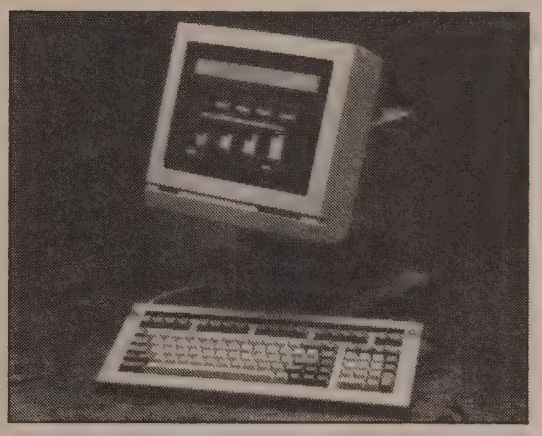

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Table 3:
Multi-User Tests

	(Compaq 386)	(Sun 386i)
Shell (one user)		
Real	2.2	2.42
User	0.07	0.16
System	0.68	0.95
Shell (two users)		
Real	2.12	4.67
User	0.13	0.35
System	1.23	2.07
Shell (three users)		
Real	3.34	6.36
User	0.17	0.57
System	1.83	3.05
Shell (four users)		
Real	4.34	8.24
User	0.3	0.79
System	2.4	4.09
Shell (five users)		
Real	5.04	10.45
User	0.37	1.05
System	3.01	5.08
Shell (six users)		
Real	5.93	12.93
User	0.45	1.23
System	3.57	6.17

and files may be shared between the two operating systems. The DOS windows support monochrome, Hercules, and CGA display modes (EGA adapters could be added using the AT compatible expansion slots).

The Norton "System Information: Utility" gives the 386i's "PC in window" a healthy 27.5 rating. In spite of its obvious power, I/O in DOS windows seems sluggish. No DOS access is provided for users working on character terminals attached to the system.

A Modest Benchmark

For a first look at the 386i's performance, a suite of UNIX benchmarks (first published in an article by David F. Hinnant in the August 1984 issue of *BYTE*) was run on a 386i model 250 (80386 at 25 MHz, 80287 co-processor also at 25MHz) with 8MB of memory.

The results of these tests appear in Tables 1 – 4, along with the results obtained last fall from running the same tests on a Compaq 386 (16 MHz 80386, 2MB Memory, and 8 MHz 80287 co-processor) running SCO's XENIX. (See "How Fast Is It?", *MicroTimes*, October 1987. The source code for the tests adapted from Hinnant's article appeared in the *MicroTimes* article.)

On each computer, the test suite was run ten times. The figures in Tables 1 – 4 are averages for each test over ten repetitions. The figures labelled "Real" represent clock time or elapsed time for each test; "User" and "System" time are measurements of the time spent by the CPU running user instructions and privileged system calls respectively. The total CPU time is the sum of "User" time and "System" time.

Several things are worth noting about these this benchmarks. Above all, because so many variables affect computer performance, care should be exercised in drawing conclusions from these numbers. No attempt was made to "tune" either of the machines tested. The configurations used were "off the shelf" configurations.

In each case the user running the tests was the only user logged in to the systems tested. However, the 386i was more heavily loaded: it was attached to a network, and daemons to manage network processes were running.

In any benchmark, it is tempting to concentrate on elapsed time; clock time is, after all, the amount of time the user must wait between commands. However, the difference in system load between the two computers may make this a misleading comparison. A comparison of CPU times is a good indicator of machine performance more or less independent of system load.

The 386i is not an AT clone. It was designed from the ground up as a UNIX machine, and in fact is the first Intel-based computer to run a version of Berkeley UNIX.

To see the 386i at its best, look at its times for the CPU intensive benchmarks: the "Sieve," "System Call," and "Loop" tests. Given a CPU intensive task, the machine lives up to its processor's specifications.

The power of the CPU, however, is not reflected in overall system throughput. In any of the tests involving disk activity, ("Disk Read," "Disk Write," "Pipes," and the various "Shell" tests), the 386i performs at about the level of the Compaq, and for the mundane mix of jobs in the "Shell" test the 386i seems to be at a disadvantage, posting substantially higher times for both elapsed time and CPU usage.

Table 4:
Compiling the Test Programs

	(Compaq 386)	(Sun 386i)
Compiling dwrite.c		
Real	7.62	4.96
User	1.24	1.33
System	2.25	1.98
Compiling dread.c		
Real	3.3	5.19
User	1.29	1.44
System	1.17	1.94
Compiling fcalle.c		
Real	2.67	4.32
User	0.7	0.93
System	1.14	1.81
Compiling fcalla.c		
Real	2.54	4.35
User	0.68	0.91
System	1.08	1.82
Compiling loop.c		
Real	2.73	4.73
User	0.75	1.18
System	1.1	1.86
Compiling pipes.c		
Real	3.01	5.21
User	1.11	1.34
System	1.11	1.98
Compiling scall.c		
Real	2.63	4.55
User	0.67	0.89
System	1.07	1.84
Compiling sieve.c		
Real	3.1	4.62
User	1.18	1.32
System	1.09	1.93

Now, what do these benchmark results mean? Why should a computer that can crunch numbers at half the speed of light bog down running the ordinary jobs that are the Hapless User's lot? The technical reasons for this anomaly are not at all obvious.

It's tempting to use the distinction between personal computers and workstations to "explain" the relative performance characteristics of the Compaq 386 and Sun's 386i: workstations, this argument maintains, are specialized computers designed to perform computation-intensive tasks, it's hardly surprising that they offer less than optimal performance running shell scripts. But this begs the question. Why shouldn't a more powerful computer (which the 386i seems to be) perform better across the board? □

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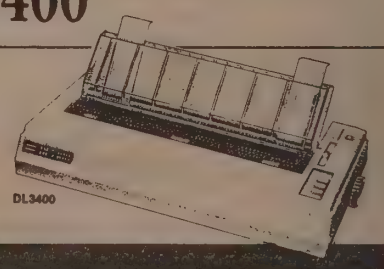

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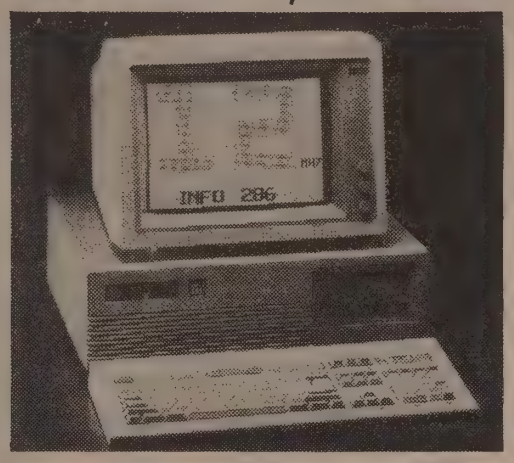

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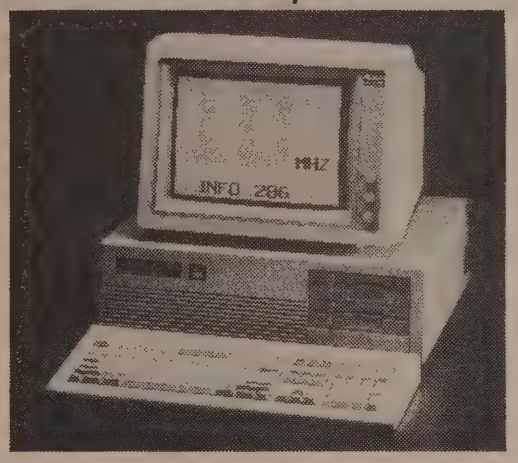

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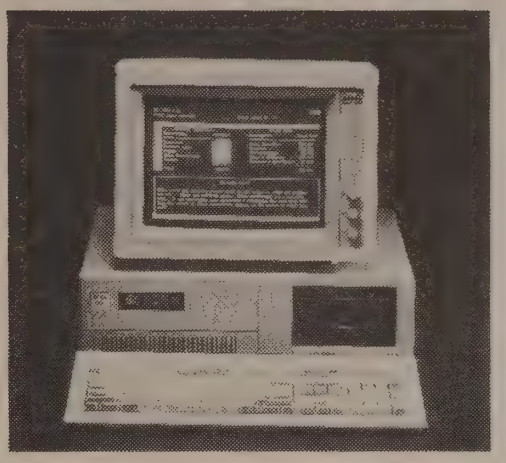

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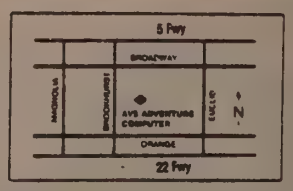

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The Next Generation In Graphics Tools

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Until about a year ago, the art produced on personal computers looked like, well, computer art: its origin was unmistakable. Even in the Macintosh world, where most professional artists choose to work, the results were disappointing. If an illustrator chose a bit-mapped drawing program, such as the once-revolutionary *MacPaint*, the result was big chunky dots on the page. Even *SuperPaint*, with its "smoothing-the-jaggies" LaserBits option, could help only a little.

Object-oriented programs like *MacDraw* were little better. The resolution was significantly better, but the drawing tools were primitive: most notably, all the programs lacked the simple freehand "pencil" and "brush" tools common to bit-mapped programs. Draw programs store screen information as mathematical formulas, and the art of programming hadn't advanced far enough to figure out how to make graceful arcs, curves and lines into mathematical objects. Artwork created with these early programs had all the warmth of most technical illustrations.

But *MacDraw* and its ilk were cheap and ubiquitous, and when newspapers jumped feet first into Macintoshes (a 1987 survey of some members of the Society of Newspaper Design showed that of newspapers using computers for art, Macintoshes were preferred 85-15 over all other computers combined), *MacDraw* became a de facto standard.

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usually charts, maps and technical illustrations — to member newspapers in *MacDraw* format. And their work looks increasingly dated.

Evolutionary programs, like *Cricket Draw*, *Illustrator* and *Laser FX* helped bridge the gap. These programs harnessed the power of PostScript, Adobe's revolutionary page description language, but were often erratic in performance (especially *Cricket Draw*, which most desktop publishers abandoned as being too unreliable) and couldn't accurately display on the screen what they would produce.

Adobe's *Illustrator* tackled head-on the problem of Bezier curves, those graceful irregular curves that real things are composed of. *Illustrator* wouldn't allow an artist to create such a curve by simply drawing. But the artist could draw a sketch freehand, then use a digitizing scanner to create a *MacPaint* file, import it to *Illustrator* and trace it, creating a series of interconnected dots. Each pair of dots could be manipulated into a Bezier curve, any angle, any radius. *Illustrator*'s new method was either highly intuitive or counter-intuitive: many artists loved it and were able to produce remarkable new line art. Others found it precise but laborious, more mechanistic than artistic.

Illustrator and its brethren were capable of sophisticated image manipulation and infinite shadings of gray, even color. However, the Macintosh Plus they were designed for simply wasn't enough of a workhorse. In addition to being (in retrospect) quite slow, it had a small screen, and a monochrome one at that.

The Macintosh II changed all that. Here came a computer with a much faster processor, able to handle lots more memory, with the option to add large monitors displaying life-like color or shades of gray. Here was a platform — an expensive one at perhaps $7,000 for a nicely loaded color Mac II — for the professional artist and illustrator.

It's been just over a year since the Mac II was introduced, and software firms have responded with professional-quality programs for professional illustrators. SuperMac's *Pixel Paint* is, so far, the ultimate supercharged *MacPaint*-like bit-mapped painting program. Adobe will soon be shipping *Illustrator '88*, a major upgrade of its premiere drawing program, and the release version will be the subject of a future *MicroTimes* review.

Enter FreeHand

But another competitor in the high-end drawing arena is already on stage. Aldus, the company which in large measure created desktop publishing with its *PageMaker* program, has for the past three months been shipping copies of *FreeHand*, a remarkable illustration program which addresses some of the deficiencies of *Illustrator 1.1* and has reportedly caused Adobe to speed up its release of *Illustrator '88*.

Aldus didn't create *FreeHand*. It bought it, then named *Kaleidoscope*, from Altsys, the Texas company that created the highly-regarded font creation programs *Fontastic* (bit-mapped letters) and *Fontographer* (PostScript outlines).

Aldus took *Kaleidoscope*'s hottest feature and made it the product's new name: *FreeHand* has a smooth drawing tool just like those in any bit-mapped drawing program. When the mouse button is down and cruising around, a smooth continuous line appears on the screen. When the mouse button comes up the line in a split second is divided into an array of Bezier curves, each of which can be adjusted much as in *Illustrator*. Gone is *Illustrator*'s most nagging shortcoming, its inability to follow the artist's hand as it flowed across the screen.

Color Separations

This free-form drawing tool is unquestionably *FreeHand*'s single largest innovation, but by no means its only one. *FreeHand* is, I believe, the first program on the market that can automatically create and print color separations. And to explain what that means requires a minor diversion into the arcana of color printing.

The color photo on the cover of *MicroTimes* appears to include subtle hues from throughout the rainbow. They don't; it's an optical illusion. So-called "full color" printing is really composed of four primary inks: cyan (something like sky blue), magenta (a cool pink-red), yellow and black. What appears to be red on the cover is really a small yellow dot, partially superimposed on a small magenta dot. Green is a cyan dot and a yellow one. By using different tints ("percentages") of the four colors one on top of another, "four-color process" printing can simulate perhaps 100 million colors using just four colors of ink.

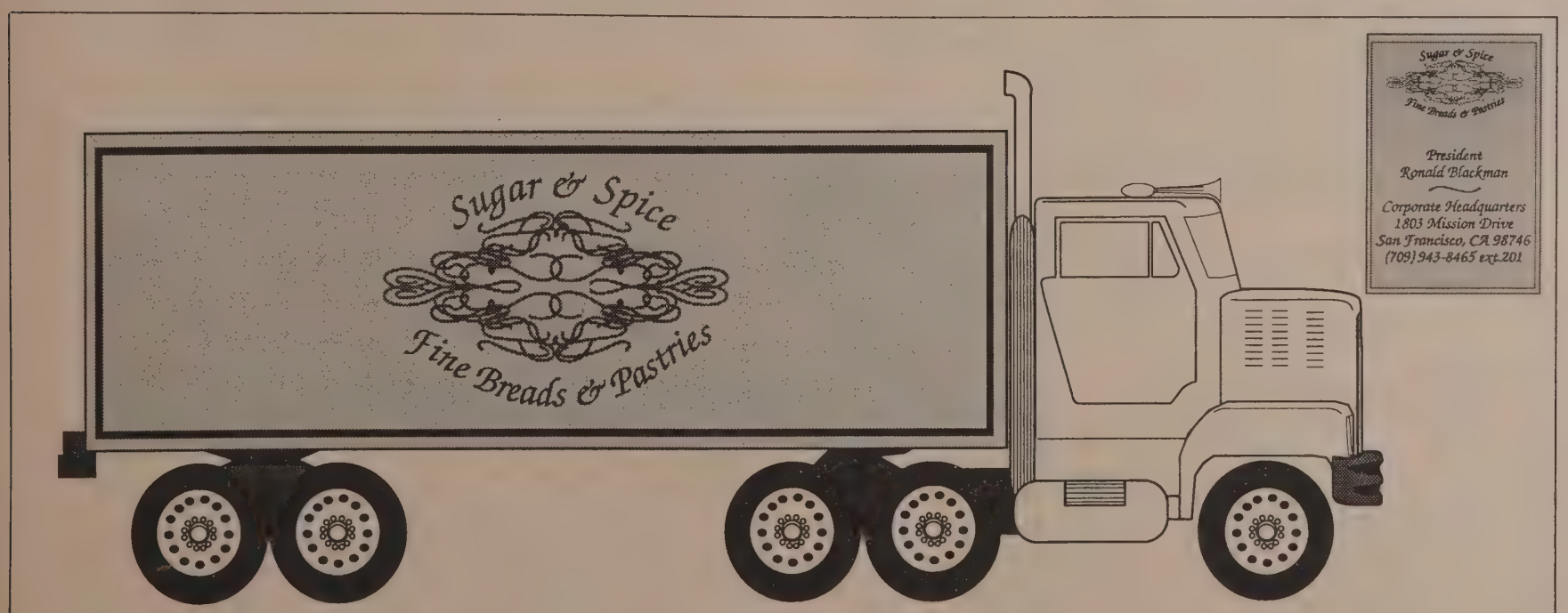
To add a further wrinkle of complexity, if the dots fall right on top of each other, strange patterns, called "moire," appear. To avoid them, the dots on each color separation must be angled 15 degrees from the next separation.

In pre-*FreeHand* days, artists doing four-color work had two ways to get color separations: one was expensive, the other laborious. The most traditional way was for the artist to do a full-color original of the artwork, then send it to a company that either electronically or photomechanically created the color separations. That could be expensive. If a corporate identity program used a four-color design, new separations would be required for each different size of finished work: letterheads, envelopes, business cards, packaging, decals, etc. At from $80 – $300 apiece the cost can add up.

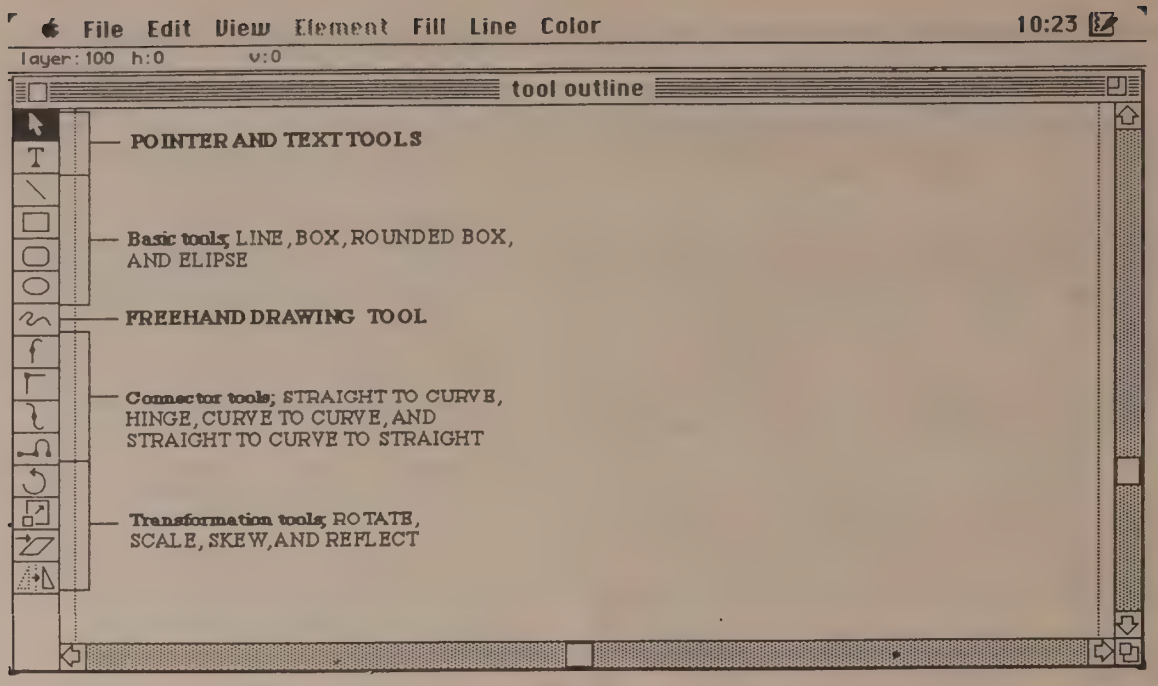
The second method — for the artist to hand-cut the colors for each process color — is not only tedious, but doesn't lend itself to fine detail work.

The great contribution of *FreeHand* and the other professional drawing programs that will follow is that they bring the Mac II's awesome computing power to bear on color separations. The *FreeHand* artist can choose any 256 colors from a palette of 16.8 million colors and use them to create the most intricate designs. When it comes time to produce color separations, the artist clicks a box in the Page Set-Up menu, and the computer analyzes each pixel for its color makeup and produces four-color separations, adding the appropriate screen angles to avoid "moire," straight out of the LaserWriter, Linotronic or other PostScript printer. No expensive photomechanical color separations; no laborious hand-cutting of screens.

While writing this review we had a chance to give *FreeHand* the acid test. Commercial artist/illustrator R.B. Madrid created a four-color newspaper info graphic that was to be output on the local type shop's Linotronic 300. But when, on deadline, the Lino refused to print the *FreeHand* file, we were forced to settle for LaserWriter Plus 300-dpi output. The results were just fine: screen definition that is certainly up to newspaper quality, and no moire patterns. Our conclusion: LaserWriter output is just fine for newspapers and



Because PostScript-based art can be resized indefinitely without distortion, the same logo can easily be used for business cards and semis.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layer: 100 h:0 v:0
tool outline
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Transformation tools; ROTATE, SCALE, SKEW, AND REFLECT

FreeHand offers a revolutionary breakthrough in its freehand drawing tool, which lets the artist easily trace existing art for conversion to PostScript.

newsletters.

Incidentally, the printing problem was the Lino's fault. The local shop was using an out-of-date version of Apple's system. If you will be sending your file to a service bureau, be sure to include a copy of your system file and printer files of any special fonts you have used.

FreeHand can be used on a stock one-megabyte monochrome Macintosh Plus or SE. And it can be run, Aldus says, on a system with just two 800K disk drives. We encountered no problems running it under MultiFinder, Apple's new multi-tasking system.

A final tip — Get QuickerGraf (Apple calls it QuickerDraw, and it's included in the latest release of Apple system software). Screen re-draws in color, which increase in time as the document's complexity increases, are at least twice as fast under QuickerGraf. □

Copyright © 1988 by Roger Karraker and Robert Madrid. All rights reserved. *Roger Karraker teaches journalism and Macintosh at Santa Rosa Junior College. He is desktop publishing editor of Community College Journalist Magazine and is co-host of the desktop publishing conference on The WELL, the Sausalito, CA. regional conferencing system.*

Robert Madrid is a freelance designer, illustrator and computer graphic artist in Forestville, CA.

FreeHand: The Artist's Report

For the past several weeks commercial artist/illustrator R.B. Madrid has been using *FreeHand* on a daily basis, along with *Pixel Paint*, *Illustrator 1.1*, *Cricket Draw* and other programs. He's used them to create newspaper information graphics, corporate identity programs, packaging designs — and his own wedding invitation.

One of his first *FreeHand* projects was to re-create in PostScript a complicated poster which illustrated how thunderstorms occur. Madrid had hand-painted the original. It required two weeks of research and sketching, then about 30 hours of intricate painting in acrylics. He re-created the poster in *FreeHand*, improving its type characteristics a bit, in about two hours. Here's a summary of his report on *FreeHand*:

Color palettes: "I spend a lot of my time selecting colors, and *FreeHand*'s authors have done a good job of thinking out how artists use color. Two basic pre-configured color palettes — standard and crayon — come with the program. But artists can add as many different palettes as they need, limited only by the 256 colors the 8-bit Mac screen can display.

"For a demo corporate identity program I spent nearly three hours fine-tuning and revising my color palette. Once I'd chosen the final palette, I was able to save it for future use. If I later decide to alter one or more of the palette's color definitions, all of the artwork in that file using that color will be automatically changed in an instant. The color palettes allow me to preview how colors work together.

"In addition to four-color separations, *FreeHand* allows artists to create 'spot' colors — custom blends that will be printed with a single mixed ink. *FreeHand* will create a print separation for each spot color. It doesn't however, automatically translate these custom colors to the industry standard Pantone Matching System. This isn't a major problem, and is a shortcoming that will likely be remedied in an early revision."

Tools: "*FreeHand* supplies the artist with a sophisticated set of transformation tools to rotate, skew, mirror and scale objects, including graphics and text. Rotating, skewing and scaling help me quickly copy and transform a simple logo and show how it will be used, not only on two- dimensional paper, but in three-dimensional signs, matchbooks, even truck sidewalls."

Type: "*FreeHand* has excellent type handling. Type can be scaled to any size, put in color, curved, rotated, skewed, or bound to an invisible line. One drawback: text is typed in a 'type box,' and text within each box can only have a single characteristic: all must be in the same point size, all italic, or all bold. To change type styles, the type box must not only be open, the type must be highlighted as well. Although this is a bit awkward, *FreeHand* comes back with excellent controls that allow the artist to control kerning (the space between letters) as the type is being stretched, rotated or skewed."

Fills: "The essence of object drawing is filling each object with a color. Here *FreeHand* has one significant limitation, along with a lot of choices. The artist has a choice of standard (solid) fills of any color in the palette, or linear and logarithmic blends of two colors from any angle on the compass, or radial fills from the center of the object. What's missing here is the ability to create irregular fills: fills where the highlight isn't dead center in the object, or where the blend from color to color isn't in regular increments. *Pixel Paint*, for example, has a nifty 'shapeburst' option that allows the radial fill to conform to the shape of the object."

Pasteboard: "Like Aldus' *PageMaker* program, *FreeHand* is set up to replicate a traditional artist's environment. Outside the document lies an area Aldus calls, logically enough, the pasteboard. The artist can move items off the document onto the pasteboard and still have them in full view, available at a mouse click. The pasteboard is a valuable addition; too many other programs have omitted it."

Layers: "A great deal of commercial artwork is typically assembled in layers, often with elements destined for different colors put on separate sheets of clear acetate. An illustration may be pasted up on one board, then typed on another, with the colored rule or box on yet another. With *FreeHand*'s color separation facilities, separate sheets of acetate aren't necessary. But *FreeHand* has retained the notion of layers, and that makes it extremely easy to assemble complex artwork.

"Each object may be assigned a layer, from 1 (bottom) to 200 (top). The artist can elect to work on all layers simultaneously or on any individual layer, leaving untouched intricate adjacent objects.

"*FreeHand* cleverly uses its layer control for working with templates. Like *Illustrator*, *FreeHand* allows importing bit-mapped images to be used as templates. Illustrator uses an 'open template' command. *FreeHand* uses the traditional Macintosh clipboard. If the artist assigns the template to the 'zero' level, it will be visible to trace or overlay colors, but won't print when the artwork is completed."

— Roger Karraker and Robert Madrid

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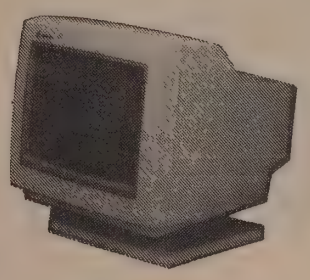

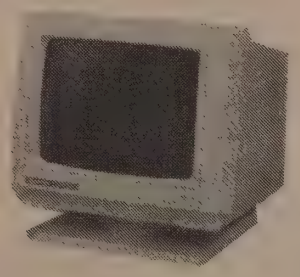

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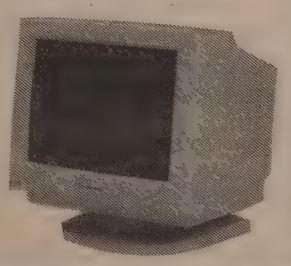

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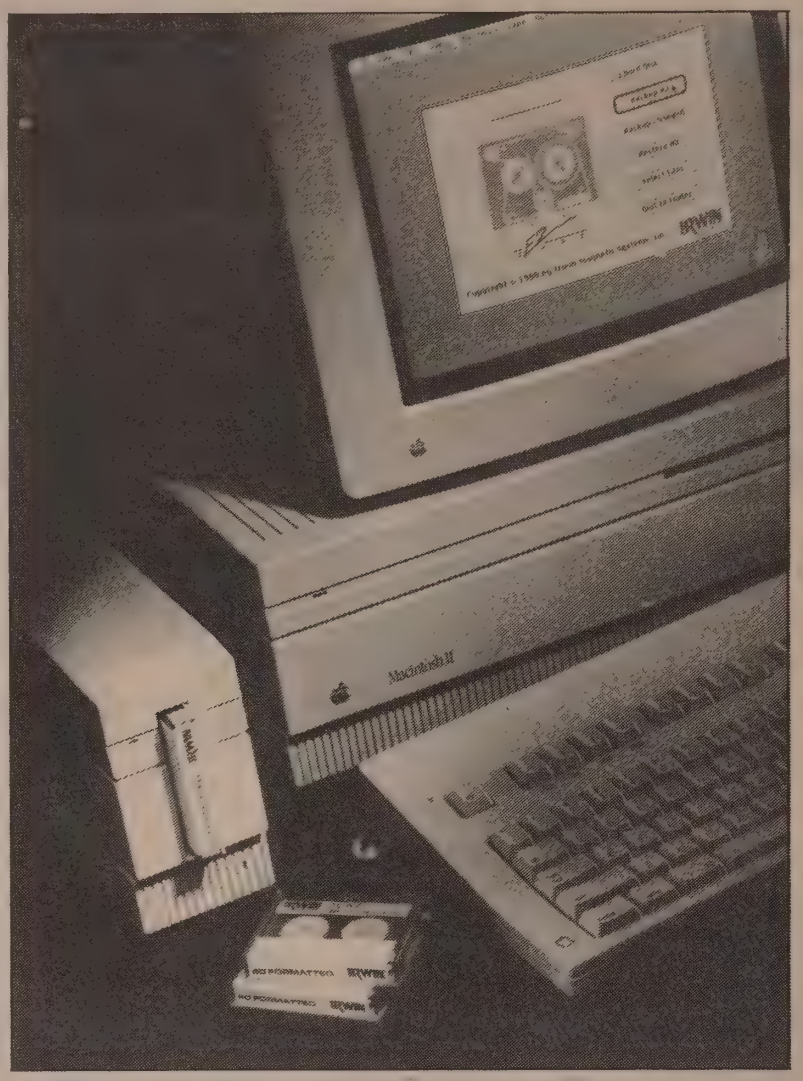
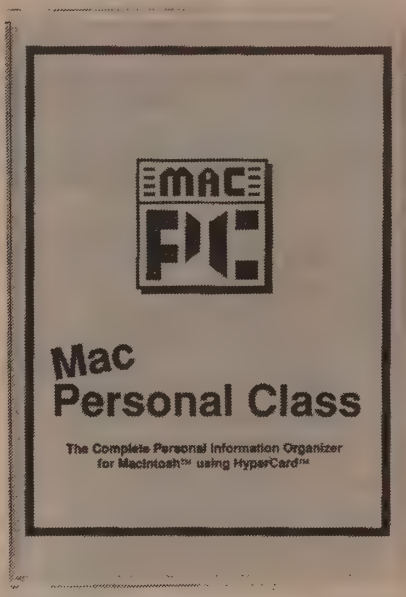


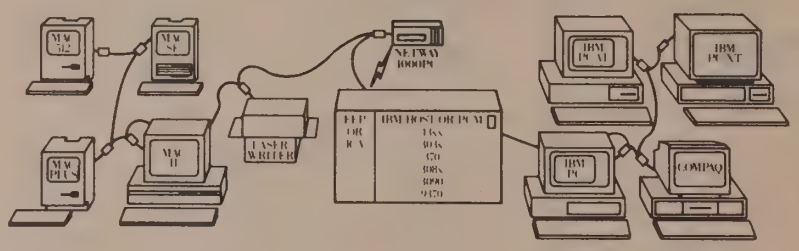
Model 5080 Mini-Cartridge Tape Backup From Irwin

The Model 5080 from Irwin Magnetics is a high capacity minicartridge tape backup for the Macintosh. It can store 80 megabytes of hard disk data on a single DC 2000 minicartridge. The 5080 is self powered and has a SCSI interface. It is also able to transfer data between Macintoshes, IBM PS/2s and PCs through the exchange of pop-in minicartridges. Irwin Magnetics (313) 996-3300.



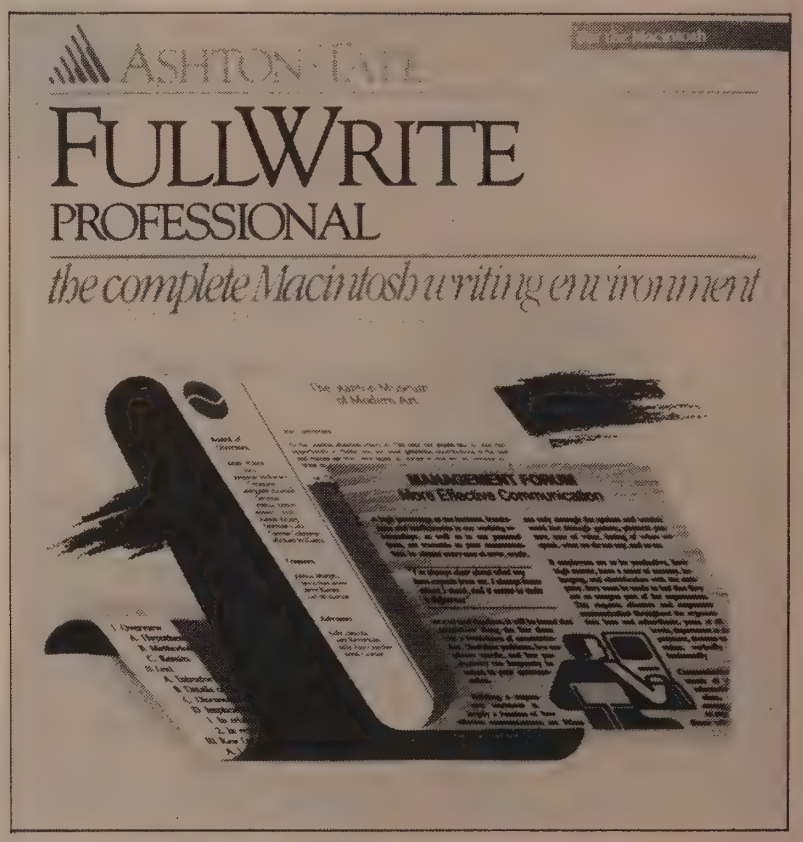
Mac Personal Class Organizes Your Information With HyperCard

Mac Personal Class is a *HyperCard* application from Quadmation that keeps records of all your vital personal information. *Mac Personal Class* has special stacks for insurance information, personal wills, real estate, ownership information, assets and liabilities and other important information. It also features auto installation on your home card, self registration that avoids duplicated data input, and detailed help screens. ($59). Quadmation Inc., 1016 E. El Camino Real, Suite 160, Sunnyvale, CA 94087. (408) 985-8984.



Netway 1000 Connects Macs And PCs To IBM Mainframe

The Netway 1000 from Tri-Data is a LAN based gateway that allows both PCs and Macintoshes co-residing on an AppleTalk network to communicate with an IBM mainframe. It gives the PCs and Macintoshes 3270 workstation-like capabilities. The Netway 1000 consists of 3274 emulation hardware and 3270 workstation software that enables users to access mainframe functions such as electronic mail, database management and order entry. The Netway 1000 cuts costs by using less expensive AppleTalk cables and PC add-on cards rather than coaxial cables and cards. ($3,995, includes gateway and 3270 workstation software.) Tri-Data Systems, 1450 Kifer Road, Sunnyvale, CA 94086-5306. (408) 746-2900.



FullWrite Professional From Ashton-Tate

FullWrite Professional, now available from Ashton-Tate, combines word processing, page layout and draw-type graphics into one program. Among its page layout features *FullWrite* lets you wrap text automatically around irregularly shaped graphic images, and allows multiple column width layouts on the same page. It also features kerning and leading controls, guttering and facing pages. Word processing features include endnotes, footnotes and citations, custom style sheets, 220,000 word thesaurus and a 100,000 word spelling checker. ($395). Ashton-Tate, 20101 Hamilton Ave., Torrance, CA 90502-1319. (213) 329-8000.

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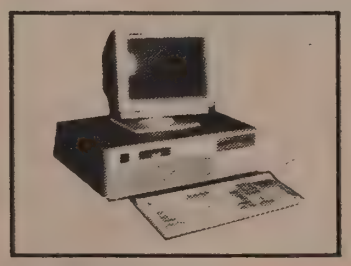

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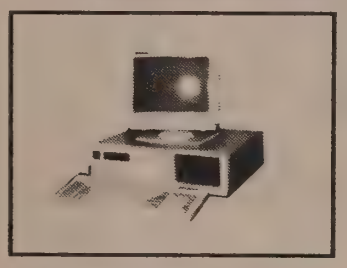

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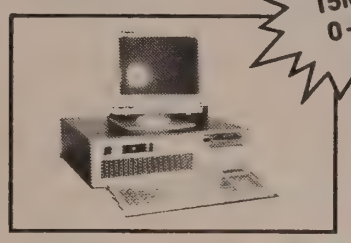

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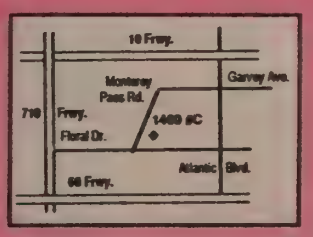

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Activision's Reports: Beating The Card Format's Limitations

By Birrell Walsh

Reporting has never been *HyperCard*'s best point. You might design a very satisfactory address stack in *HyperCard*, or a billing system, or an inventory system. Then you would abandon it part-way through when you discovered that *HyperCard* cannot make mail-merge letters, or (easily) do totals for your data, or make invoices out of your billing data. So what do you do?

Now what you do is to go out and buy a copy of Activision's *Reports*, an apparently complete report system for *HyperCard* which helps you overcome these problems.

When you get *Reports*, you are asked to install a "report card" in each stack from which you may want reports. The report card has slots for a number of reports — you can define as many as you wish, because you can open up a second report card if you wish.

If you choose "Edit Layout" from the buttons on the report card, you are carried to an edit layout screen. On that screen, you can design five different sections of a report. Each section shows on the layout screen as a band, which you can widen or narrow at your choice.

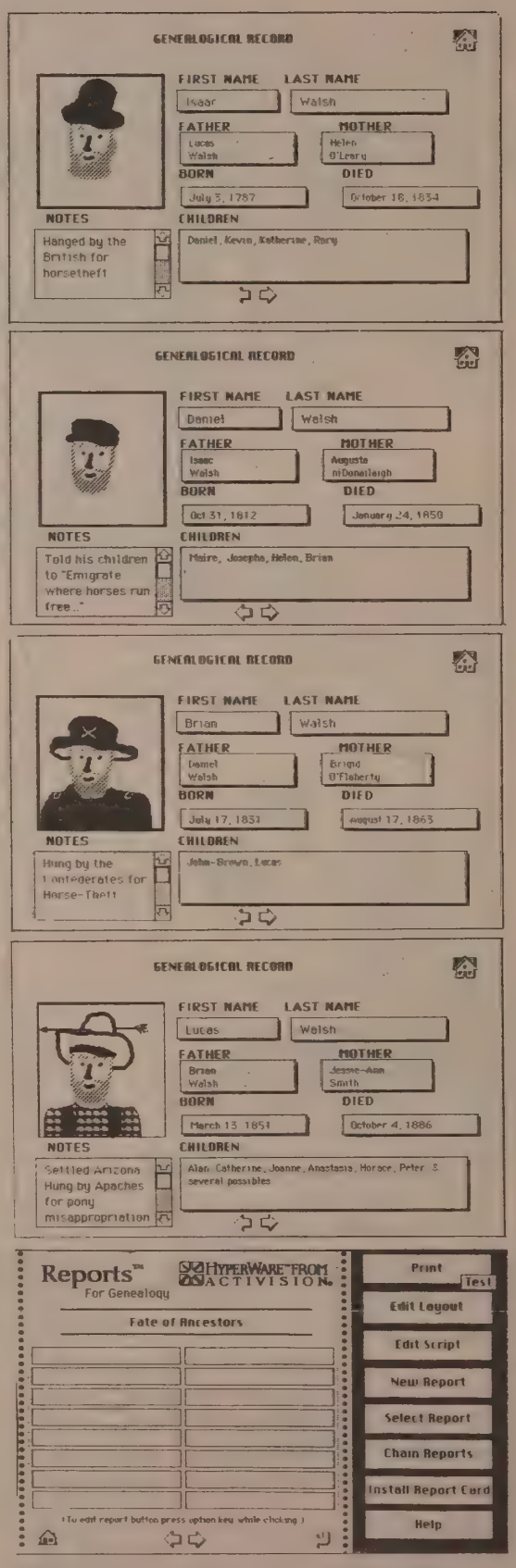
The Header Section will appear at the top of each page. The Detail Section is for each card's data. On it you can design the part of the report which details the information you get from each card. You would use the Detail Section to design the display of the names and addresses on an address list, or of itemized items on an invoice.

The Break Section allows you to design subsections of your report, and to obtain subtotals. I used the Break Section to divide my own financial information for end-of-the-year tax reports. I get all my expenses listed, sorted and totaled by category, with one button push.

The Totals section is suitable for the same purpose, but gathers totals for the entire report. The Footer Section manages the bottom of each page in the same way as the Header Section manages the top of the page.

Like all reports systems for databases, *Reports* can require some try-and-retry. You should be able to make a simple report immediately, but extended and complex works will require some time and programming. Activision has included Preview, a print-to-screen utility, which allows you to do your tryouts without using up paper by printing a full page in miniature to the screen. (You will also be able to use Preview with your other programs, as it gets installed in your System Folder: an added benefit).

Did I say programming? Yep. You can program in *Reports*. The bad news is that you *must* program in *Reports* to create anything but the most elementary of reports. The program is actually a set of XCommands and XFunctions which get installed in *HyperCard*. You can write scripts to use with each section, to pass over cards, to update cards, or to insert graphics in your reports.



When you install a "report card" in your stacks, Activision's Reports program lets you incorporate HyperCard's text and graphics features into a variety of custom reports beyond HyperCard's own capabilities.

The scripts you write are in HyperTalk, the *HyperCard* programming language — another reason for learning it.

I think it was a brilliant move to include graphics in the program. It allows you to use the graphic-cum-text strength of *HyperCard* in your *HyperCard* reports as well. To illustrate it, I designed a quick genealogy stack using my ancestors, a line of aggressive entrepreneurs in their time. As you can see, the reports generator allows me to bring their pictures as well as textual information to the report that I have called "The Fate of My Ancestors." (The cartoons are not Activision's fault. They could be replaced by scanned-in pictures from Thunderscan or by more professional artwork.)

Imagine a real-estate database in *HyperCard* which had a picture of every house scanned in. You could use *Reports* to print out a personalized list of possible houses for clients, each with pictures. *FileVision* is already doing this — but at a considerably higher price.

I wish that Activision had included two additional features: Print-to-Disk in a word-processor format (I guess *MacWrite* would be the best), and print-to-ASCII-file so that at least unformatted text can be sent by modem. I also found one bug — the system bombed when I wrote a particularly arcane script that passed global variables every which way. But this is pickiness. The main verdict is: Bravo! Activision's *Reports* is well done and very, very useful. (*Reports*, $99.95 from Activision, PO Box 7287, Mountain View, CA 94039, 415/960-0410.)

Keep That String Tied 'Round Your Finger

The First Annual (that's such a *hopeful* phrase!) HyperExpo and StackMart will be held Saturday and Sunday, June 11 and 12, at the Civic Auditorium in San Francisco. Tickets are $25 (one day) and $40 (two days) in advance. At the door they will cost five dollars per day more. Why do these shows cost so much? Still, it will be a superb chance to see *HyperCard* Do Its Stuff. If you are a developer, it is an opportunity to show your things and see what the other folks are up to.

You can contact the promoters at American Expositions Inc., 110 Greene Street, Suite 703, New York, NY 10012, 212/226-4141.

Keep Those Cards And Letters Coming!

You can leave messages, comments, praise and blame for stackware and *HyperCard* on the WELL (415-332-6106; user ID "birrell") or CompuServe (User ID 72466,3567) or by US Mail to: Birrell Walsh, 2440 Sixteenth Street #165, San Francisco, CA 94103. □

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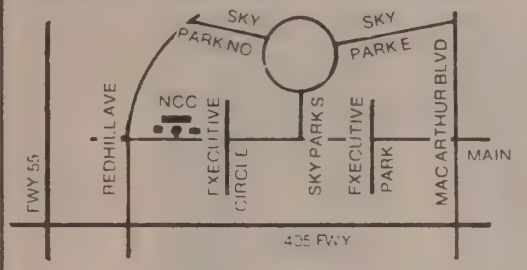

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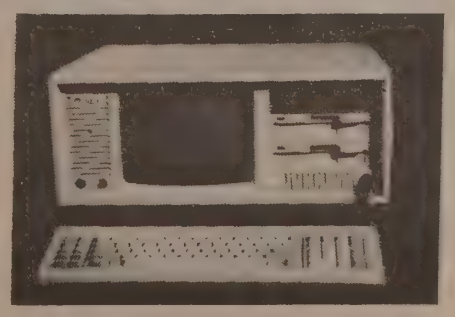

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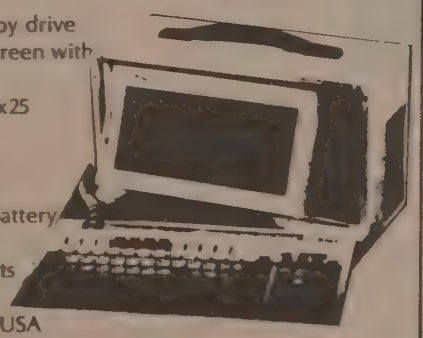

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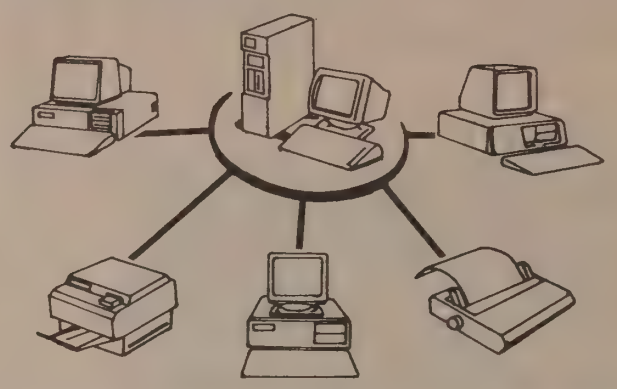

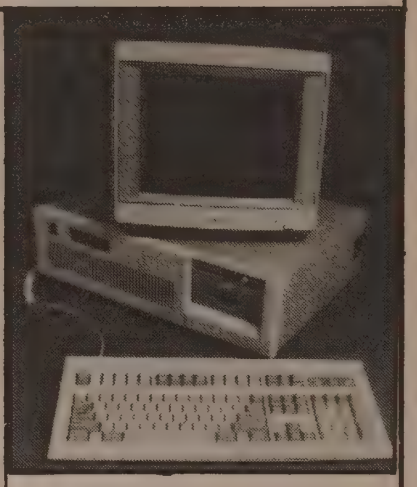

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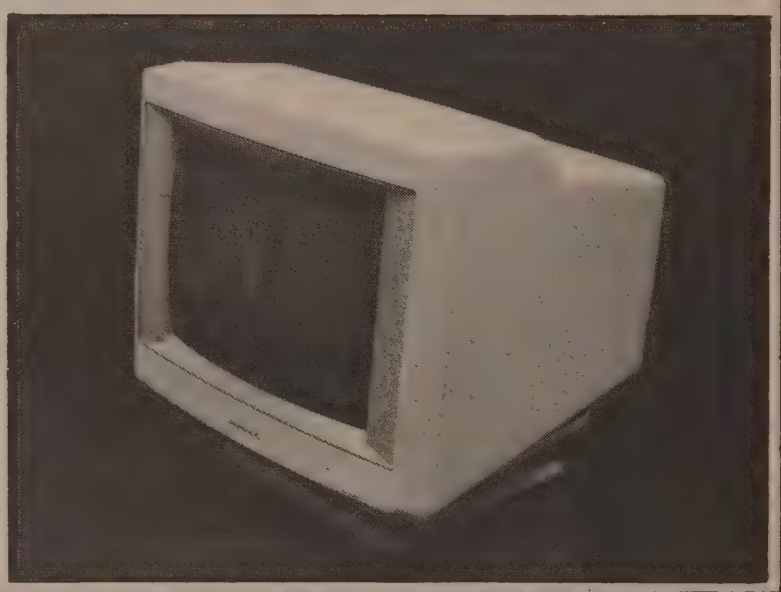

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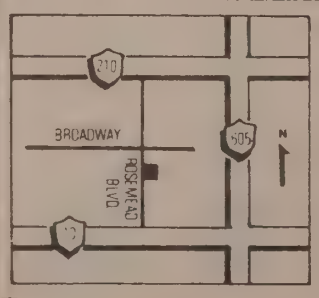

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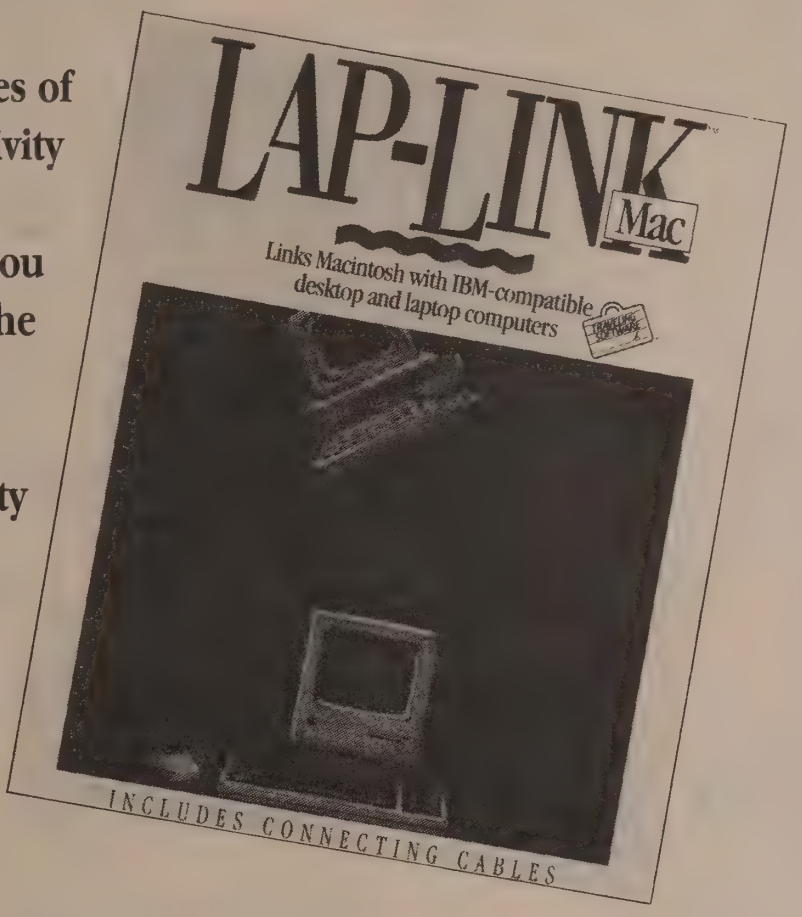
Microlan

Lap Link: How Traveling Software Makes Connectivity 'Easy'

Or, Get Your Hand Out Of My Lap, Mac

By Robert Grant Beauchamp

If you have fantasies of Mac to PC connectivity on a low budget, Lap-Link Mac lets you take advantage of the different strengths of each machine, solve incompatibility problems and move lots of files quickly without spending a lot of money.



In my many attempts to get my AT clone, Boris, to "connect" with Natasha, my Macintosh, I've always kept my eye open for any threadbare romancer's dream: the truly cheap date. The principle of the Truly Cheap Date (or TCD) is to carry off the same, or nearly the same, result without the cost of the Terribly Expensive Date (or TED).

Any High School Male (HSM) knows this principle well, as do those without Lucrative Kinfolk (LUCK).

Nonetheless, with a little imagination and a willingness to do without the frills, a TCD can turn out to be just as wonderful a TED, and in any case is better than NADA (No Date At All.)

There are many people who have the need to transfer files between a Mac and a PC, but don't want to spend the money for a network solution. This is especially true for those who want to take PC word processing files and put them into Macintosh desktop publishing programs, such as *PageMaker*.

It is no surprise, then, that the solution to this problem should come from none other than the kings of the cheap date, Traveling Software. Traveling Software has been offering low cost solutions for laptop owners since 1983. What else can you say about a company whose catalog makes you want to buy a laptop just so you can get all that inexpensive stuff that fills its pages? Or for that matter a company whose president, until recently, carried around a Radio Shack Model 100 wherever he went?

If you have ever met Mark Eppley, president of Traveling Software, you know that his youthful enthusiasm is rarely suppressed. Even after having his car stall in the middle of San Francisco's Chinatown on a recent visit, he was more than willing to discuss one of the more important issues facing laptop owners today: how to get *Asteroids* to run.

His loyal public relations rep, a little more frazzled from the day's hectic schedule, was grateful when the discussion moved from video games to the appointed topic of the day, Lap-Link, a product designed to provide a simple and speedy method of transferring files between laptop and desktop PCs.

While I listened to Mark describe the features of Lap-Link, I was saying to myself, "Sure, this is great for laptops, but that's my whole problem — I have an AT that would rather hook up with a slick chick Zenith than Natasha the wallflower. How about a cheap way to transfer files between a Macintosh and a PC? Now *that's* a trick."

When I asked him about this, he said that a product was in the works. Knowing this business, I didn't hold my breath. I needn't have been cynical, however, as, sure enough, along comes Lap-Link Mac.

The advantage of a network is the ability to use files directly off another station's hard drive, share peripherals and printers, and support electronic mail.

The major advantage Lap-Link Mac, on the other hand, is that you don't have to pay a lot of money on AppleTalk connectors, cables, PC add-in boards and network software to simply transfer files back and forth. For $139.95 you get the software and cabling necessary to connect two computers.

Lap-Link Mac works by transferring files through a serial port on the PC and the modem port on the Mac. Compatibility is assured by a special four-way cable that gives you a choice of two connectors for each computer.

On the Mac end of the cable there is a connector for the new round Plus, SE and II ports and one for the older 128K and 512K Macintoshes. On the PC end there is a 9-pin DB9 connector and a 25-pin DB25 connector for whatever size serial port your computer might have.

The only trick to hooking up the cable for Mac-Link Mac is knowing where your PC's serial port known as COM1 is located. Chances are, if your PC is fairly typical, you only have one serial port. If you have a lot of add-in cards, however, you're going to have to take some time to get to know what all those ports are for.

Installing the Lap-Link Mac software is also simple. On the PC you have the choice of altering the AUTOEXEC.BAT file, allowing you to call up Lap-Link Mac no matter what directory you might happen to be in at the time.

While you don't get all the extras of a network, you do get more with Lap-Link Mac than a simple way of transferring files. You also get speed. Lap-Link Mac transfers your files at the perky rate of 57,600 baud. While this doesn't match the speed of the original Lap-Link for Laptop-PC connectivity (over 115,200 baud) it is still much faster than using two jury-rigged 1200 baud modems. Besides, as Aunt Mildred would say, your PC shouldn't be running with that over 100,000 baud crowd anyway. What's wrong with settling down with a nice 57,600 baud sweetheart?

While all Macs can operate at 57,600 baud, not all PCs can. Lap-Link allows you to lower the baud rate until you find one your PC will

work with. As it is only a few PCs that can't work with this baud rate, you probably won't have a problem here.

More Than Just A Cable

Along with speed, there are a host of other features that make Lap-Link Mac more than just a cable to send files over.

If you have a great many files on your PC's hard disk, all with typically cryptic names like WHREAMI.HLP, then you can group files any way you desire. You can tag all the files in a directory, or all those with similar "wildcard" designations.

One of the cardinal rules of Mac-PC connectivity also applies to transferring files with Lap-Link Mac. If at all possible use applications that come in both PC and Macintosh versions. If you transfer a file made in *Word* on the PC, you can designate it as such before copying it to your Mac. This way when you open the file up on the Mac it calls up the application and translates the file into the Mac version format automatically. Lap-Link will let you do this with *WordPerfect*, Aldus *PageMaker* and Microsoft *Excel*. For spreadsheets other than *Excel*, you can format your files into one of the popular spreadsheet formats such as SYLK or .DIF. The Lap-Link Mac manual provides complete documentation on transferring files including *dBASE* files.

Transferring ASCII files is also aided by Lap-Link Mac. If you've ever had to modem a file from a PC to a Mac and then open the file on the Mac you are familiar with what's known around the *MicroTimes* office as "those d--n *WordStar* boxes." To get rid of these annoying little boxes that pepper the file, Lap-Link Mac offers a Carriage Return/Line Feed Conversion option. A carriage return and a line feed on a PC are the same as a carriage return by itself on the Mac. When you select this option the PC carriage return/line feed is translated into a Mac carriage return, thereby eliminating those aggravating boxes at the beginning of each line. It also works in reverse when copying files from the Mac to the PC.

Directory Maintenance

If you don't use programs like *PC Tools*, *Norton Utilities* or *MacTree*, then you're going to be in for a pleasant surprise with Lap-Link Mac. In order for it to do all the wonderful things it does, Lap-Link Mac provides powerful directory maintenance capabilities.

Lap-Link Mac divides the PC screen into two halves (all work is done on the PC, the Mac acts as a "silent partner") with one side providing you with a directory of your PC disk and the other side the Macintosh disk. The command line runs along the bottom of the screen, providing such information as what directory your located in, the COM port you're using and the baud rate you have chosen. Along with providing Help, Copy and Group commands, you can also choose Tree, View, Erase or Rename — commands usually reserved for powerful utilities programs.

To those whose hard disk is a mystery, the Tree command is truly fascinating. It provides a schematic diagram of your directories and subdirectories on the PC and folders on the Mac. Not only does it let you see the structures of your disks but it also allows you to change them. Which means no more cryptic DOS commands such as MKDIR.

While you're cruising around in your newly mapped directories you can also do a number of other functions usually reserved for DOS commands. Once you've entered a directory with the Log command you can erase files, rename them or copy them into another directory. Lap-Link Mac also lets you view a file in order to make sure it's exactly the one you want before you copy or delete it.

Lap-Link Mac And Networks

If you do have a network and want an inexpensive way to add in an incompatible machine, Lap-Link Mac is a good way to do it. While you won't be able to take advantage of all the network's capabilities, you won't have any problem transferring files over your network with Lap-Link Mac software.

If you have fantasies of Mac to PC connectivity, but your pockets are just about empty and you're willing to do without network capabilities, Lap-Link Mac could be your dream date. You can still take advantage of the different strengths of each machine, solve incompatibility problems and move lots of files quickly without spending a lot of money. And remember a truly cheap date can be as much fun as a truly expensive date, you just can't brag about it as much.

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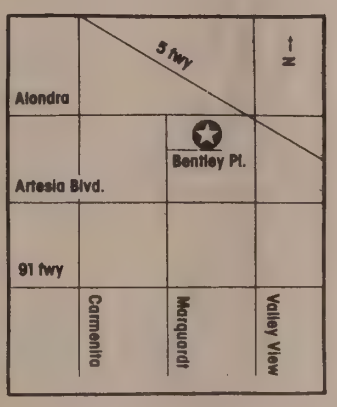

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New Amiga Operating System: KS/WB 1.3

By Matthew Leeds

Last month I introduced the new operating system coming for the Amiga. This month I will cover those features I didn't have room for last month. As before, I must caution you that my information is based on a preliminary release version and may be subject to change prior to the final release of KS/WB 1.3.

Fast Filesystem

One of the most significant additions to 1.3 is the new fast file system (FFS). This long-rumored improvement to hard disk performance really does exist, and the performance increase is remarkable. A little background may help you in understanding how the new FFS works.

The old filesystem stored data blocks with 24 bytes of header information and 488 bytes of user data. This forced the old filesystem to read one block of data, decode the block (remove the header info and pass on the user data), and then fetch a new block. The FFS stores only user data in data blocks. This lets DMA hard drives transfer data directly from disk to memory. This is a turbocharge for your hard disk system. Speed can be improved to 5-20 times the usual performance of your application. In addition, since you are no longer storing header information with data, you gain an additional 50KBytes per megabyte of space.

Nothing comes for free, and there are some tradeoffs. Non-DMA hard disk controllers will not see such significant improvements in speed. Since the header information that was removed from data blocks was used as redundant protection against hash chain corruption, there is a slightly lower chance of recovering data from a crash. A few programs will not operate with the FFS. And since the Commodore 2090 hard disk controller auto-mounts the old filesystem, you must give up about 60KBytes (one or two cylinders) on your hard disk to the old filesystem.

I've installed the FFS on my hard disk system (PAL expansion chassis with Seagate ST225 20MByte drive) and the speed improvement is amazing. The disk access LED no longer blinks, it just comes on, loads the file, and goes off. High-res pictures come up in an instant, DOS commands operate as if from a RAM disk, and I can no longer go out for coffee while loading a *DigiView* RGB file.

New Printer Support

There is also a new printer.device and a new set of printer drivers to go along with it. The new printer.device supports automatic centering of images on your page, several different forms of dithering including ordered, half-toning, and Floyd-Steinberg (used for color printing of facial tones), and color correction to better match the screen colors to the final page output. The entire printing process is much faster. You will notice the improvement mostly while printing graphics.

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The new printer drivers include improved versions of the old drivers and some new ones. The new drivers include support for the Epson, NEC, and Toshiba 24 pin dot matrix printers, the CalComp ColorMaster and ColorMaster2, the Hewlett-Packard DeskJet and PaintJet, the Hewlett-Packard LaserJet II, the Okidata 293I, and the Canon PJ-1080-A. If you are shopping for a great color printer, I recommend the Hewlett-Packard PaintJet printer. It's dead quiet, puts out saturated colors, is virtually maintenance free, and has an excellent NLQ mode.

New Preferences

Along with the new printer support is a new Preferences. Most of the changes are in support of the new printer.device, but there are other changes as well. If you make changes to the date or time in Preferences and select Save, those changes will automatically be saved to the battery-backed clock in the 2000 and 500 if present. The CLI ON/OFF option no longer exists. The CLI icon will be in the System drawer.

A new option has been added to the Grey Scale selection — Grey Scale 2. This option is in support of the new A2024 monitor (see below). Additionally, a new Graphic Select screen has been added to support the new printer.device features. You can select automatic antialiasing, set the left offset (margin) for an image or turn on centering, select the amount of color correction, and the width and height limits of an image by tenths of an inch or pixels.

You can also control the density of the printed output to speed up a draft output of a graphic, control the dithering used by the printer, and set the scaling used by the printer. The scaling and width and height controls provide a tremendous amount of control over the final result of printing a graphic. For example, by settings in Preferences you can force a program to output a graphic to an exact size, to scale a graphic only in integer pixel amounts (to preserve exact aspect ratios), or to scale a graphic to fit a specific width or height letting the driver handle the calculations to decide the other dimension.

Etc.

Not as exciting to most, but of interest to everyone who wants to get the maximum performance out of their Amigas, are the new 1.3 IEEE Double Precision Libraries. These new math libraries are up to seven times as fast as the old libraries, and average twice as fast for basic math functions. They also allow developers to write a single program that operates with standard Amigas, Amigas with 68020/68881 boards, and Amigas with standalone math coprocessors. This provides a standard operating environment for the development of standalone 68881/68882 boards such as the Microbotics Starboard math coprocessor option.

Commodore has reached an agreement with Adobe to license some of the Adobe screen fonts for the Amiga. Four screen fonts will be included with the new operating system. These screen fonts are equivalents for the most commonly used PostScript fonts, and provide a better WYSIWYG correspondence for desktop publishing applications.

The Commodore A2024 monitor is a grey scale monitor that contains a frame buffer driven by the Amiga's RGB port. It offers several display modes including a 640X400 non-interlaced, eight grey scale display and a 1008X800 two or four grey scale display. Before you start drooling, keep in mind that we are talking about a monitor that will require a 1MByte minimum Amiga; you won't see maximum use of the monitor until the new chip set providing 1MByte of chip RAM becomes available. A few simple calculations will suffice.

The new monitor requires the loading of a new library into chip RAM that uses 16KBytes, and two libraries that use up 125KBytes of fast RAM if it is available. A one bit plane (two color) 1008X800 window requires 100.8KBytes of memory, so a four color full size window on the new monitor would require 217.6KBytes of chip RAM just to get started. That is in addition to the chip RAM used by the operating system at boot. Smart refresh windows, graphics applications, multi-tasking, all would put additional system demands on chip RAM.

That wraps up my coverage of the new operating system. I'm off to the Amiga Developers Conference, and I've been told that most of what will be discussed will not be under non-disclosure. I should be able to bring back information on Commodore's announced two new Amigas, additional new products from Commodore, and information on new software and hardware products from third party developers. □

Matthew Leeds has been involved in the high tech field since he blew up his bedroom playing with a children's chemistry kit. He has been using Commodore computers since 1982 and has a strong interest in photography, video, graphics and related fields. He currently works for Infinity Software.

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The FBI Comes Rapping, Rapping At Your BBS

By Brock N. Meeks

If that new user on your local bulletin board system (BBS) seems to be asking a few too many personal questions, you might want to reconsider answering. Unless of course, you don't mind your answers being stored in a database maintained by the Federal Bureau of Investigation (FBI).

That new user just might be a member of a special FBI task force scouring the nation's electronic landscape. Or so contends Glen L. Roberts, director of The FBI Project, which publishes *The FBI And Your BBS* and a privacy/surveillance newsletter called *Full Disclosure*.

You're shaking your head; OK, so I was a bit leery of him, too. After all, the FBI is such an easy target. Then I started rummaging through an old, coffee cup-ringed file labeled only "FBI/Computer Squad." In there I found several old clippings and other documentation that started to back up Roberts' statements.

If You Dig, You Hit Dirt

In 1984 a short series of discreet advertisements, placed by the FBI, appeared in a few computer trade publications and in *The Wall Street Journal*. The message was simple, and went something like: "We're looking for computer literate persons to join the Bureau." There was no mention of any special task force; however, it was clear that the Bureau wanted to upgrade its high-tech prowess.

Although the FBI won't confirm the existence of a computerized "hit squad," a public relations officer from the Bureau did confirm that they "have made an extraordinary effort to recruit more technically oriented personnel" since 1984.

If you dig hard enough, you'll find substantial evidence that the FBI is most definitely working overtime in its efforts to monitor the electronic community. "They are desperately wary of the way information flows so freely in this medium," says Roberts.

There was a number scrawled on the inside flap of that dogeared folder. It was annotated "Former agent; possible source." I called the number, and got a story.

"I was recruited in 1983 by the FBI for my computer skills," the former agent told me. Because he still does some consulting for the Bureau, he asked not to be identified, but he laid out a very specific plan by the FBI to increase its knowledge of the electronic communications world. He confided, "If the Bureau is monitoring BBSes, it's a small group." Much more likely, he offered, the FBI is drawing on the expertise of a small band of high-tech freelance snoops to augment their staff, until their own skills are honed.

Copyright © 1988 by Brock N. Meeks. All rights reserved. *Brock Meeks is a San Diego-based columnist. His favorite radical BBS is...well...private.*

If you dig hard enough, you'll find substantial evidence that the FBI is working overtime in its efforts to monitor the electronic community. "They are desperately wary of the way information flows so freely in this medium," says Glen L. Roberts, director of The FBI Project.

Tradition

Certainly the FBI has a tradition of "investigating" groups of people it deems "unsavory" or threatening. Recent published reports told of how the FBI has gathered files on several pro-Sandanista groups here in the U.S. This type of information gathering process seems to be standard operating procedure for them.

In Roberts' *The FBI And Your BBS*, a brief history of the FBI's willingness to gather all known information on a target group is outlined.

Pulling from the Final Report of the Select (Senate) Committee to Study Governmental Operations with respect to Intelligence Activities, Book IV, Supplementary Reports on Intelligence Activities, Roberts includes this excerpt:

"Detectives were sent to local radical publishing houses to take their books. In addition, they were to find every private collection or library in the possession of any radical, and to make the arrangements for obtaining them in their entirety. Thus, when the GID (General Intelligence Division) discovered an obscure Italian-born philosopher who had a unique collection of books on the theory of anarchism, his lodgings were raided by the Bureau and his valuable collection become one more involuntary contribution to the huge and ever-growing library of the GID. [pages 87 – 88]."

Change "any radical" to "any BBS" and "book" to "disk," and quite suddenly the electronic landscape turns into a winter still-life.

Data Collection

Roberts, quoting from his report, says, "Unlike other communications media, information on a BBS does not get read by anyone before its instantaneous publication. Therefore, the FBI has much less of a possibility of intimidating the owner of a BBS into *not* publishing certain information. The FBI also acts as if BBSes have a monopoly on the distribution of so-called 'illegal information.' The FBI often uses this 'danger' as justification to monitor the activities on these systems. In reality, however, BBSes transfer much less 'illegal information' than the phone system."

Roberts' statements are worth noting in light of the government's increased interest in the marriage of criminal activity and electronic communications.

A 455-page report issued by the President's Commission on Organized Crime, dealing with drug abuse and trafficking, cites the fact that crime has moved into the high-tech arena. The report states "To the extent that law enforcement agencies' capabilities and equipment are inferior to those of drug traffickers, immediate steps should be taken to rectify the situation." The report then recommends that data-gathering efforts of several agencies (including the FBI) should be tied together in one "all-source intelligence and operations center."

The spirit of that document is being embraced by the long-distance phone companies. Tired of the multi-million dollar losses due to stolen or illegally acquired access codes, these companies are circling the wagons in a spirit of high-tech cooperative surveillance.

Quoting from a *Washington Post* article, here's what Robert Fox, US Sprint's director of security, says: "To shut down theft, the companies use each other's security services and the help of local law enforcement officials, the Secret Service and the Federal Bureau of Investigation. Your major toll carriers may be competitors, but in this one instance we share information and resources. We do everything from technical to on-street surveillance."

Evidence that the FBI is actively monitoring BBSs also came to light in the case of a Denver

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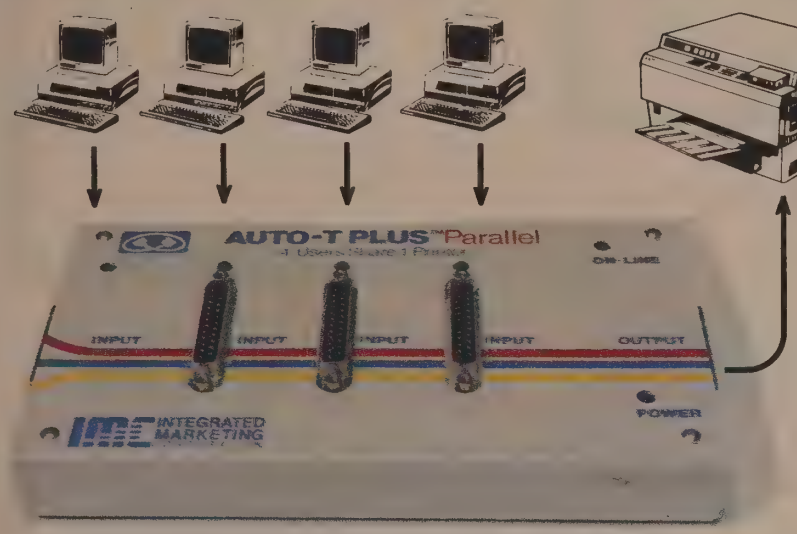

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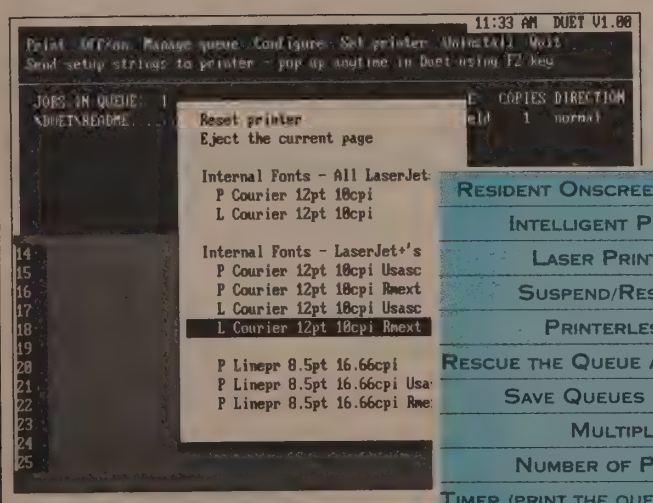
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talk show host assassinated by a neo-Nazi, white supremacy group.

Robert Miles, a defendant in the case, was a known computer buff. The FBI knew he also communicated with other groups of neo-Nazis via his modem. In order to further investigate the case (playing on a conspiracy hunch), the FBI bugged Miles' home by placing a bug *inside his modem*. Why? Every call Miles made via modem was recorded; the FBI had an instant, electronically generated map of the nationwide neo-Nazi BBS network.

Any Problem Here?

There are no laws prohibiting the FBI (or other agencies) from monitoring the public message traffic on a BBS; the Electronic Communications Privacy Act of 1986 protects private messages and privately stored files only. But what about an FBI agent monitoring a BBS solely for the purpose of gathering information on the board's users? Any problem here?

The former FBI agent I spoke with raised the concern that such casual monitoring might be a violation of the 1968 Wiretap Act. "In order to use a wire tap, you have to get a court order. Now if an FBI agent is monitoring a BBS to gather information, that becomes an interesting question, because there are very specific federal rules about a wire tap. My question to you about a BBS [being monitored] is: 'At what point does monitoring turn into a wiretap-like act?'"

Good point. The reality, however, is that there are no rules. Unless that agent is asking for private message traffic, he can, with impunity, monitor, store, and otherwise manipulate your public messages as he sees fit.

Although the FBI won't confirm the existence of a computerized "hit squad," a public relations officer from the Bureau did confirm that they "have made an extraordinary effort to recruit more technically oriented personnel" since 1984.

Roberts points out that a BBS with public access is fair game for any kind of governmental snooping. But there is a way to make such casual snooping by a federal agent a crime.

"If you want your BBS readily accessible to the public but want to protect against unwarranted monitoring, you have to provide a warning to prospective users," says Roberts. "It should read: 'This BBS is a private system. Only private citizens who are not involved in government or law enforcement activities are authorized to use it. The users are not authorized to divulge any information gained from this system to any government or law enforcement agency or employee.'"

This does two things. It makes the entire board "private." Second, it makes any kind of monitoring by the FBI (or other agencies, such as the Secret Service) a criminal offense (because they are would be guilty of unauthorized access; it also forces them to use the established guidelines of gaining information via a court ordered search warrant. The warning also protects you in another way: it stops "freelancers" from doing the Bureau's work.

Get Real

How real is the possibility of the FBI monitoring your BBS? *Slim*. Unless, of course, you happen to run a board dedicated to say, the Sanctuary Movement, or one that supports the Sandanistas or...any topic perceived to be of a questionable nature by the FBI.

The stories provided here bear out the existence of at least the FBI's increased interest in the potential of monitoring electronic messaging systems. How extensive is the FBI's actual fact gathering by monitoring BBSs? No one really knows. However, given the history of the Bureau, and the hard facts that crime in the information age makes full use of all the technology it can get its hands on, it's a small leap to believe that at least specific monitoring of certain target groups is taking place. (Given the manpower shortage of the Bureau, and its overwhelming case load, I would find it hard to argue for large-scale indiscriminate monitoring.)

Where does that leave you and me in all this? Back at square one, watching carefully what we say online. If you're a member of a "controversial" BBS, you might pass the concerns of Roberts on to your sysop. If you are a sysop, you might want to consider adding a bit of protection to the board...for the rest of us. □

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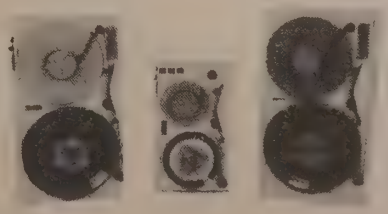

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WordWhat?

Two New Word Processors For The ST

By David Hawkins

You can now get *WordPerfect* for the Atari. Should you? Yes, buy *WordPerfect*. (Did you have something else in mind for your tax rebate check?) *WordPerfect* lists at $395 from WordPerfect Corporation. Check with your local dealer for actual price.

There's another new word processing program called *WordUp*. It's a good program. List price is $79.95 from Neocept, Inc. If price is your main consideration, buy *WordUp*.

If you didn't get a large tax rebate check, you might not want to get both. So how do you choose? These are both good programs, but they do have different strengths.

WordPerfect

If you use a wide variety of computers, then *WordPerfect* is the way to go. There are versions for IBM, Macintosh, Amiga, and Atari. While *WordPerfect* may not push the limits of any of these computers, it does make good use of each. Learn *WordPerfect* and *WordStar* (which you could run on the Atari with either the CP/M emulator or the IBM emulator) and you should be

While WordPerfect may not push the limits of the IBM, Mac, Atari or Amiga, it does make good use of each. Learn WordPerfect and you should be able to perform the same operations on just about any computer.

able to perform the same operations on just about any computer.

WordPerfect comes with a spelling checker and a thesaurus. The printer support is also excellent. The 600 page manual covers everything, though you may have to dig around to find a few things. *WordPerfect* comes on six disks, including one for the tutorials.

WordPerfect is not copy-protected, which means you can install it on your hard disk as well as on floppies. It will work on a single drive system. The first month I had it, I used it with just one drive, and was quite happy that such a powerful program didn't require a lot of disk swapping to work. (This was on a ST 1040 with a double sided drive. *WordPerfect* would probably be cramped on a single sided drive.)

David Hawkins is the host of the Atari conference on The WELL (415/332-6106); send email to dhawk. He can also be reached as David Hawkins on the Guild (415/771-7062). He has one of the first Atari ST 1040s sold in San Francisco, both monitors, an Okimate 20 color printer, and disks all over the room.

What About The Bugs?

Well, *WordPerfect* did have a few bugs when it shipped. But the company's been great at admitting where the problems are and in getting fixes out. One user told me that he's already received three free updates! WordPerfect Corp. is one of the most impressive companies I've run across for program support and customer relations. When you buy a copy, check the date of release; call WordPerfect and ask if this is the most recent version.

So, Why Consider WordUp?

The first time I used *WordUp* it left me breathless. I have eight word processors for the ST, and *WordUp* is going to be the one I use.

The fonts were the first thing I noticed about *WordUp*. Want to see text in a Swiss font onscreen or on the printer? How about Dutch? Typewriter? Want to see what you type in 24 points on the screen? Eight points? Like to see a different font in the footnotes?

And then there's graphics — *WordUp* allows you to incorporate graphics from Degas, Neochrome, or the GEM bit-image format. You can put text around the graphics. *WordUp* is one of those programs that blurs the distinction between word processing and desktop publishing.

WordUp also has needed business features like mail merge. It can take a data file and add that data to a *WordUp* document. It can also do either footnotes or endnotes.

The *WordUp* manual is well written, but the most amazing thing is that it was written with *WordUp* and printed by *WordUp* on an Atari SLM804 Laser Printer! And it looks good. The manual is a good example of *WordUp*'s capabilities.

The Down Side

Much as I like *WordUp*, there are a few flaws. Like *WordPerfect*, it had a few bugs when it shipped. My copy is dated 4/13/88, and there is a newer version that just came out. Upgrades are free; just mail in your program disk.

WordUp does not come with a spelling checker. You can use a program like *Thunder!* from Electronic Arts, though.

WordUp is GEM based. That means a lot of things that won't fit into this article, but it also means that to use a printer with *WordUp* requires a printer driver. *WordUp* comes with just one printer driver — one that works with the Epson FX80. If you have a printer that is compatible with the Epson, then you don't have a problem. If you have a different printer then you need to get a driver from Neocept. The printer driver is important if you want to print graphics.

The biggest problem I had was in changing an ASCII file to a *WordUp* one. I had used another program to strip control characters and formatting codes from the file. But when I called up the file in *WordUp* it was unreadable. I finally realized that the file still contained TAB characters which the strip program had left in there. Unfortunately the TAB character is a formatting code to *WordUp*. I called their technical support and they are working on a fix. (By the way, Mike Fulton, at Neocept's tech support, was very helpful and informative.)

Get WordPerfect if you want to know a program that you can use on a variety of machines. Get WordUp if you want a program that shows what the ST can really do.

Final Word

Well, these are two excellent programs. Pick the one that's right for you. Get *WordPerfect* if you want to know a program that you can use on a variety of machines. Get *WordUp* if you want a program that shows what the ST can really do. Both these packages deserve to do well.

Other Notes

I bought a Supra 30 Megabyte hard disk at the West Coast Computer Fair. The show price was $100 off the list price. I've only had it a week, but so far so good. I'm starting to appreciate companies like WordPerfect and Neocept who don't copy protect their software.

A recommendation: support your local dealer. Stop by a store that sells Atari software and ask what they think is hot. There are several stores where the people really know their software. It was a dealer who talked me into trying *WordUp*. I'd heard about it, but didn't realize it would be *that* good. □

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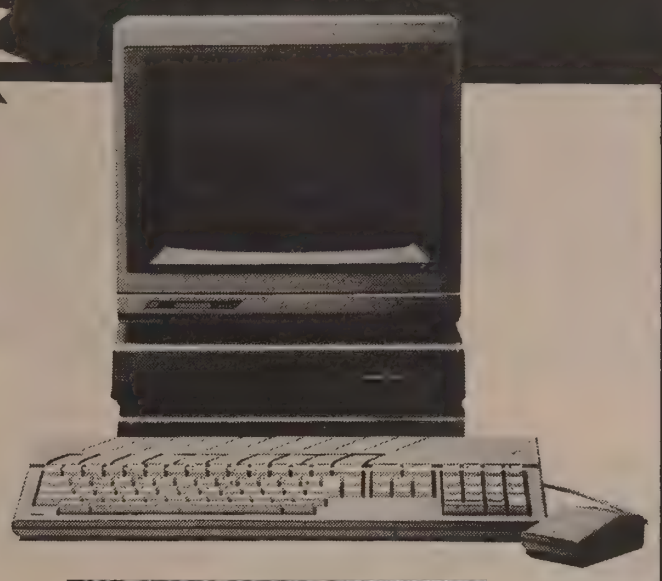

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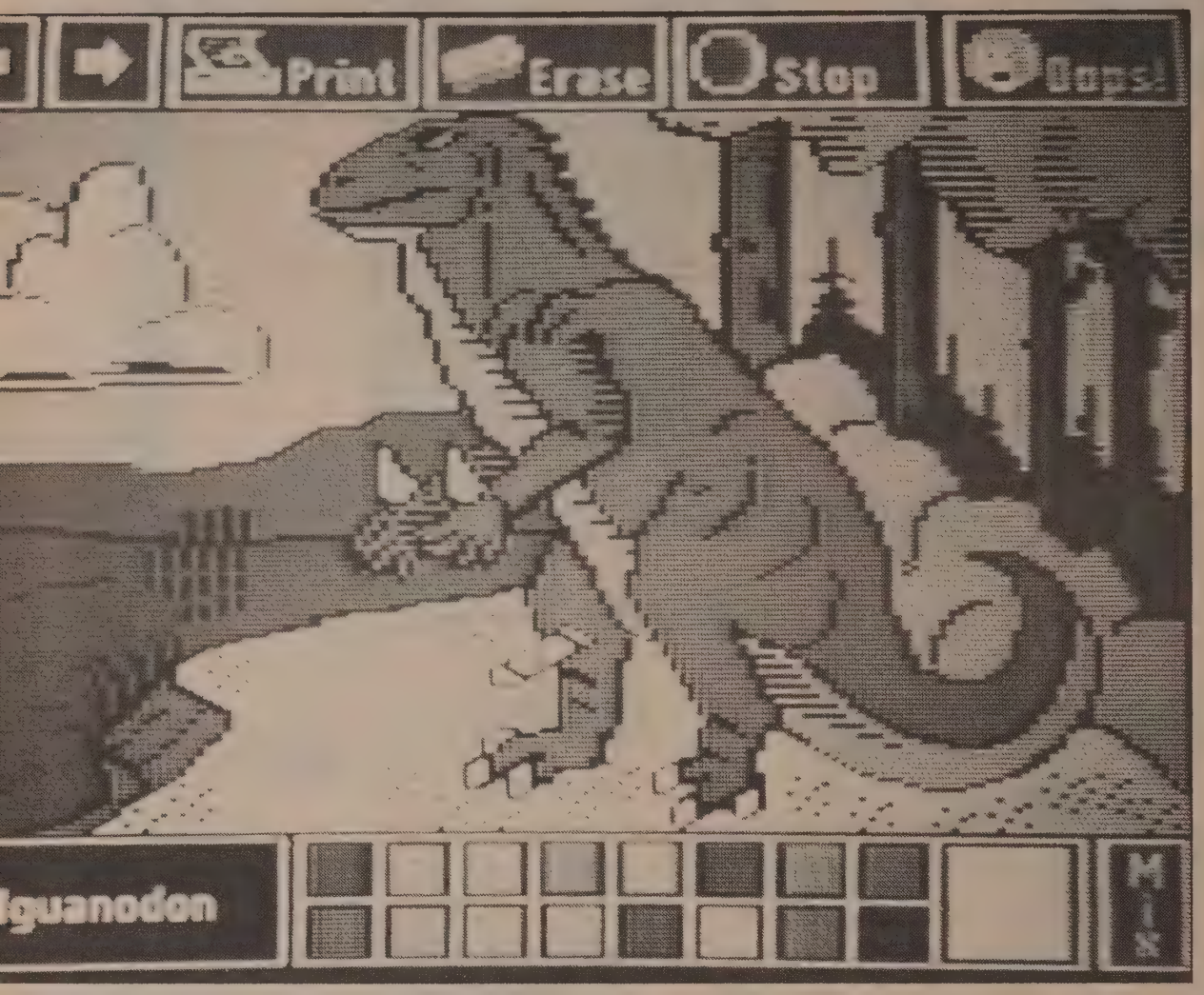

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Dinosaurs Are Forever

By: *Brian Rice*
Published by: *PolarWare (1988)*
For: *Apple II (128K); IBM PC and compatibles*
List price: *$29.95*
Reviewed by: *Mike Markowitz*

Does anyone understand the special love between kids and dinosaurs? Perhaps it's the poignancy resulting from the extinction of one of the parties some 65 million years too soon. This makes dinosaurs creatures of the imagination, the natural habitat of children.

Whatever the explanation, a dinosaur theme is a sure bet for any software package directed toward younger users. *Dinosaurs Are Forever* is an electronic coloring book, featuring some 26 different frames that can be colored, saved, and printed in various ways. The program requires 128K of memory, and is especially nice with a mouse, a color monitor and a printer that supports color output. The package label says "Ages 3 and up"—a claim that will not be startling to anyone who has seen

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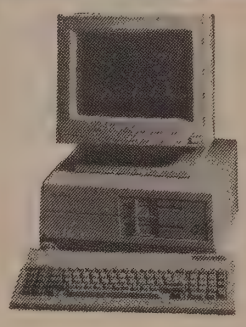

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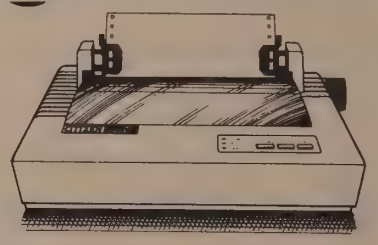

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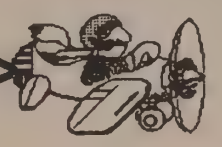

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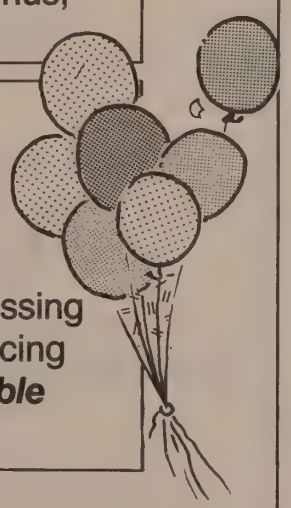

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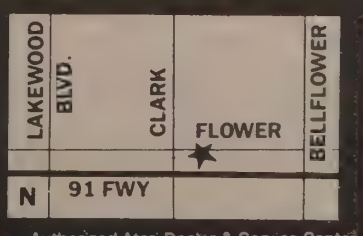

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Alan Kay's remarkable videotape of a toddler using *MacPaint*.

From our familiarity with present-day lizards, we think of dinosaurs in dull brown or green, but many other reptiles (and their evolutionary offshoot, the birds) blaze forth in every brilliant hue. There is no reason not to imagine a crimson ceratosaurus, or a turquoise triceratops.

You can print out your dinosaur with an explanatory text, or with a simple calendar for any month of any year. There is a sheet of stickers for special days on the calendar; and a simple "family tree" that outlines the evolution of the dinosaurs.

The program is not copy protected. A four-page leaflet provides complete instructions for setup and use. The list price is perhaps a bit high for a single home user, but quite reasonable for schools. (PolarWare, 1055 Paramount Pkwy. Suite A, Batavia, IL 60510 (312) 232-1984.)

Bridge Baron II

Published by: *Great American Games*
For: *Apple II, Commodore 64/128, IBM PC/XT/AT compatibles, Macintosh, Atari ST*
Reviewed by: *Robert D. Athey Jr.*

Tom Throop is a bridge expert in his own right, having won major bridge tournaments in the US and abroad. A few years ago, his company brought out two bridge game programs, one of which won the tournament where such programs were rated by having them play each other. That program was *Bridge Baron*, which has now been updated/upgraded to make it easier to play. Although my review copy was for MS-DOS, there are versions for the Apple II, Mac, Commodore 64 and 128, and Atari ST.

The tournament-winning program Bridge Baron has now been updated to make it easier to play. It can be used in color or monochrome, though color is preferable.

Bridge Baron II, a 170K+ single program, can be used in color or in monochrome, although the added red on the cards is a winner. The colors may be changed with an opening menu. The second menu offers five choices of the options on play (keep rubber bridge score? weak or strong two opening bids? etc.) and the choices continue in the play.

The program is started by simply typing in "BARON" with a carriage return. The first menu asks about color monitor, with a default "Y" for yes shown. All *Bridge Baron* queries show a default that may be accepted by a simple carriage return. The second menu, described above, may be accepted with a carriage return in this manner. The next screen queries as to the number of the deal to be played (with #1 as the default); you type in the number you want.

The next screen shows a hand querying if you want to bid it, or if you want the computer to do the bidding. When you accept, the computer asks if you want to designate the opening bidder, or if the computer should. You can respond to the displayed bidding sequence by entering a "P" for pass, a "D" for double, or a number and first letter of the suit to be bid. Upon the completion of bidding, the screen shows the hands to be played — yours and the dummy's — and the play starts.

You ask the computer to play the hand with a "‹CONTROL›A", or you can type in each card you want played. Frequently, you can play the hand better than the computer will on automatic play, but the computer does do tough defense. The computer opponents will frequently get to makeable contracts, game or slam, and you have to find the killing defense. Some hands can't be beaten, but you can beat them frequently enough to keep it entertaining.

Another option lets you claim all the rest of the tricks (with the up arrow key) and terminate play early, a great option. You may also concede all the rest of the tricks with the down arrow key, whether or not you'd lose them, just to get on to the next hand (or to replay/rebid this one better). That's handy if you arrive at an incorrect contract, and want to bid the hand again.

After the hand is played, the options menu comes up again, and you can choose to replay the same hand or get a review of all the holdings in the four player directions and a review of the play trick by trick. That's really good if you want to examine for the killing defensive play you could have made, or the way to make the most on your declarer play.

The program offers some interesting bidding and play problems. The computer's defense or offense won't let you bluff, so you'd better be on your toes. The menus make the start of play very easy, and it's quick to get into playing, a real plus. You'll really enjoy this one, if you play any bridge at all. Indeed, this is a good gift for any bridge player you know. We play this one for a few hands just about every day. (Great American Games, 8804 Chalon Dr., Bethesda, MD 20817.)

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Mavis Beacon Teaches Typing!

By: *Mike Duffy, Glenn Wichman, Norm Worthington and others*
Published by: *Software Toolworks (1987)*
For: *Apple IIGS (512K) color or monochrome, IBM PC/XT/AT*
List Price: *$44.95*
Reviewed by: *Mike Markowitz*

Like Betty Crocker, Mavis Beacon does not really exist. She is "a symbol of excellence in education." Her dazzling smile brightens the package of the best educational program yet for the Apple IIGS.

Like many left-handed writers, I was always stubbornly unable to master the arcane art of touch typing. My uncle Charlie repaired typewriters, and we acquired a huge, noisy secondhand IBM electric when I was about nine years old. Since I showed some interest in the machine, I was duly packed off to the local business school for typing lessons with the parental hope that I might acquire at least one marketable skill. Like the music lessons and the tennis lessons, this training bore no fruit. I could never quite accept the idea that I wasn't supposed to look down at the keys, and I remain, to this day a four-finger hunt-and-peck addict, with occasional bursts of six-finger productivity.

After a couple of hours with Mavis, however, I'm starting to believe I could really learn typing if I cared to. The words-per-minute are still pretty pathetic, but in every session I'm hitting a new "personal best."

There is a huge amount of code here — over 35,000 lines of "C," according to programmer Norm Worthington; and when it loads into RAM on a 512K system, there are about thirty bytes free. *Mavis* fills two 800K disks. If you have the IIGS Finder, you should check out these disks on the desktop, just to see the neat customized file icons.

The program starts up from the ProDOS 16 Program Launcher. The first dialog box offers three choices: an introductory guided tour, a "Help for New Users" demo, and an option to jump right in and start the lessons. When you start your first lesson, the program asks for information about yourself and your typing experience. The program can keep track of multiple users and their progress.

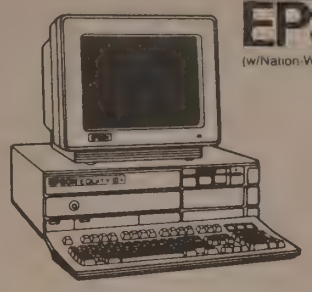
Each lesson begins with a "Chalkboard" that shows the lesson plan. You have many alternatives. you can change the drill to a game, for example. The drill screen depicts your computer and keyboard, with ghostly animated hands that echo your actions. The game screen is a car racing game, with the speed of your car set by your typing rate and the characters displayed in puffs of smoke by skywriting aircraft. Feedback is prompt, detailed and warm:

> EXCELLENT ACCURACY. THIS LESSON EXCEEDS YOUR PREVIOUS AVERAGE. SCORES FOR THIS LESSON WERE: 16 WPM ACCURACY 94% ADJUSTED WPM: 15.

Once you get past the initial drills with nonsense syllables and words, the exercises include riddles, jokes, quotes from great literature, and items from the *Guiness Book Of World Records*.

At your request, the program can display graphs documenting your performance on every key. It will even print a report card. A simple text-based dialog-driven "Resume Writer" is included as a separate program in the package.

There are lots of gadgets, like a metronome, a clock, etc. There are thoughtful little touches; like a super-sharp Monochrome mode, (for users without a color monitor) and a sound toggle, so you won't disturb others working in the same room. Instead of the standard QWERTY keyboard, you can select the more logical and efficient Dvorak



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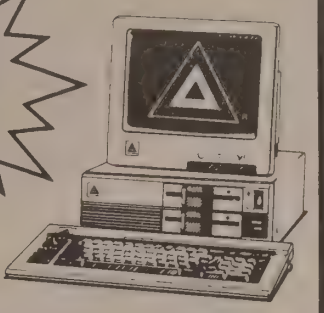

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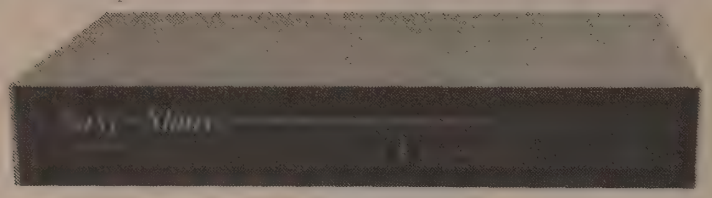

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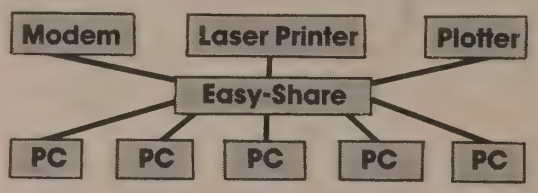

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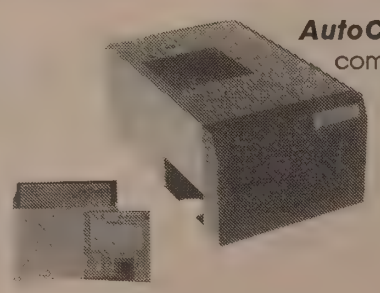

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layout. The mouse and pull-down menus are used effectively.

The 62-page manual includes a fascinating history of the typewriter, along with information on the theory of typing education and a detailed explanation of how the program operates.

Those who enjoy pumping irony may note that the Apple IIGS version of *Mavis* is a typing tutor program for a computer with a truly awful keyboard. The IIGS keyboard keys are flat, squarish, packed too tightly together, and have a dead "feel." The old IIe, in contrast, had a high-quality keyboard that was a delight to the fingertips. Apple is perfectly capable of making an excellent detached keyboard — look at the Macintosh SE and the Mac II.

Hardware design flaws, however, are not the fault of software authors. The team at Software Toolworks has done something truly extraordinary with this program. A lot of the "educational" software we are going to get for the IIGS will be the same old soporific drill-and-practice, tarted up with super hi-res graphics and stereophonic sound. *Mavis*, however, is an intelligent tutoring system. Until recently, this sort of thing was at the cutting edge of research in artificial intelligence. Implementing something this sophisticated on such a small, slow CPU was quite a feat of programming.

Surprisingly few (male) computer people are good typists, perhaps because of stupid cultural stereotypes that decree that typing is women's work, and programming isn't. The implementation of office automation in some professions, like Engineering, is crippled by the refusal of male executives and middle managers to learn keyboard skills. Programs like *Mavis* could be a solution. A version for the IBM PC is available, and versions for most other popular systems are planned. (Software Toolworks, 13557 Ventura Blvd., Sherman Oaks, CA 91423. 818/907-6789. Software Toolworks titles are also distributed by Electronic Arts.)

BOOKS

The Elementary Apple IIGS

By: *William B. Sanders*
Published by: *Computer! (1986), softcover, 262 pages*
List Price: *$15.95*
Reviewed by: *Mike Markowitz*

Documentation for the Apple IIGS so far has either been too lightweight (the Owner's Guide, for example), or too heavy (the Technical Reference, intended for programmers). The newness of the IIGS means there are few people around with much experience on the system, and the inevitable lag between writing and publication means that much of the available published material was based on preliminary versions of the software, and prototype hardware.

The Elementary Apple IIGS is billed as "a friendly beginner's guide" to this powerful new machine. In effect, it is a rehash of the material in the Owner's Guide, a few hints and tips on ProDOS, and an extensive tutorial on AppleSoft BASIC. Programming the IIGS in AppleSoft BASIC is like hitching your new Porsche to an ox-cart. Get Real, OK?

There is a good brief chapter on the Super High-Res graphics and sound, and an excellent chapter on "You and Your Printer."

The book is spiral bound (to lie flat). There is a good index, and some useful Appendices. It is not worth sixteen dollars, unless you really need a tutorial on Applesoft BASIC. (Computer! Books, P.O. Box 5406, Greensboro, NC 27403.)

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USER GROUP NETWORK By Mary Eisenhart

Thanks to all of you for the steady stream of new listings and updates we've been getting lately. Let it never be said that things are stagnating in the world of computer users.

On June 18, the **Software Entrepreneurs' Forum** will be presenting a seminar on Direct Response Marketing, at which **Ray Jutkins** will present "The Eight Point Market Action Plan." He'll also be discussing such topics as "Why Direct Marketing?" and "Smart Telemarketing." Registration is $95 for SEF members and $170 for non-members; interested parties should call Barbara Cass at (415)854-7219.

There's a new user group for **Ventura Publisher** fans in the Bay Area. **Pam Sheble** has kindly sent word that the **Ventura Desktop Publishing Users Group** is now meeting in San Mateo at 1650 South Amphlett Blvd. in the conference room on the second floor. Meetings are on the first Tuesday of the month. Pam says that the group is so new that they haven't had time to figure out details like how much the membership dues should be, so you too can get in on the ground floor of this fine organization. Pam suggests that if you'd like more information, you would do well to call her at (415)574-2003 or **Eleanor Church** at (415)726-3181.

Paradox devotees also have a new group of their own. **Bobby Ulloa** writes in to tell us that there are two chapters: **San Francisco Paradox User Group**, which meets on third Wednesdays, and the **South Bay Chapter**, which meets on third Tuesdays. For the specifics, call **Jeffrey Edwards Co.** at (415)543-6227.

Jacqueline Janssen of the **Sacramento PC Users Group** invites interested parties to come check out the speakers scheduled for the next couple of meetings. The July meeting will feature presentations by the ever-popular **Philippe Kahn** of Borland International and **Richard Landry**, the managing editor of *PC World*. Tentatively slated for the August meeting are representatives of **Ashton-Tate** presenting *dBASE IV* and **MicroPro** with *WordStar* 5.0. Jackie reminds us that SPCUG meetings are always free and open to the public, and that third Wednesdays are the days to circle on your calendar. She invites you to call her for more information at (916)383-6900.

Jackie also adds that the group recently had its elections. Congratulations to president **Rick Hellewell**, executive vp **Tony Barcellos**, vice president **Milt Hull**, secretary **Ginny Lindstrand**, and treasurer **Tom Dovi.**

Also on the PC front, **Loyd Cribbs** of the **San Francisco PC Users Group** points out that the group's June 20 meeting will feature a presentation by **Phil Quackenbush** of **QW Page Software Company**. He'll be demonstrating the *New Views* accounting-spreadsheet packages, so financial wizards and would-be financial wizards might want to be there. The July 18 meeting will feature **Ashton-Tate** with *dBASE IV* in what's being billed as a Data Base Jamboree. Both meetings will be held at the usual time and place: Room 1, Building A at Fort Mason Center in San Francisco, 8 pm. Call Loyd at (415)751-5219 for further information.

Jason Israel of beautiful downtown Artesia has some news about Southern California Macintosh groups. The **West Orange County Macintosh User Group** meets monthly at the F&M Bank in Rossmore Center on the last Tuesday of the month. Furthermore, the **California State University Macintosh User Group** meets on the Cal State Long Beach campus. Jason himself, who's a sales rep at ComputerLand in Artesia, invites you to call him for further information at (213)924-1474. If you're more the modem type, you can call his board, the **Backroom BBS**, at (213)920-2113. The board supports baud rates from 300 to 9600 at 8-N-1, and features a special section, the **Computer Sales Persons Group**, for retail sales folks to exchange information and ideas.

Also in Southern California, **Audrey Chiu**, the secretary of the **San Fernando Valley Amiga Users Group**, invites the local Amigaites to attend the group's meetings on second Thursdays at the American Legion Hall in Reseda. The address is 7338 Canby Avenue, and **Randy Likens**, at (818)719-9211, is the person to call for more info.

There's quite a bit going on in the online world too. Apple II users might be interested in the news from **Joseph Kohn**, who's one of the co-sponsors of **AppleSig** on The Source. Through June 30, there's a special arrangement by which you can join The Source without paying the usual membership charges, and also receive a $60 credit. You can do this yourself by calling 1-800-336-3366, giving the operator the claim number 7BL6101, and having your VISA, AMEX MasterCard or Discover Card handy. If you'd just like more information, you can call Joe at (415)459-0231.

Lynzie Flynn of **Lynzie's Motherboard**, the ever-popular BBS in the San Fernando Valley, has an addition to the information we gave you last month. She'd like to clarify the fact that (213)650-6172 is a 9600-baud-only number. "Unless the callers are calling at 9600, they are doing themselves a disservice to call that number. If they call any of the others they will be at the beginning of the rotary and will be able to get on line much quicker." So try calling (213)650-0519 or (213)659-1982 instead, unless you're the lucky owner of a 9600 baud modem.

The WELL, our favorite online hangout, has now installed packet-switched direct lines in the Peninsula and San Jose areas: (415)960-3158 for Menlo Park, (415)323-4028 for Palo Alto, and (408)292-0158 for San Jose. There's a fixed connect charge of $3 per hour, which compares quite favorably with toll calls to Sausalito. If you'd like to know more about the new lines or the WELL in general, call information director **John Coate** at (415)332-4335.

And finally, with elections upon us again, our WELLbuddy **Bob Bickford** invites Libertarians and other liberty-oriented types to call **The Liberty Bell BBS** at (408)243-1933. There's plenty of political discussion and areas for EchoMail and NetMail. The board operates 24 hours a day at 300-2400 baud.

Well, that's about it for this month. Keep that correspondence coming: send email to microx on The WELL (415/332-6106) and US mail to User Group Network, 5951 Canning Street, Oakland, CA 94609.

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Terrapin Station. (203) 656-0134. Grateful Dead Board. Sysop: Klaus and Gretchen Bender.

209

Bertha Board. (209) 239-9853. 300/1200/2400 8-N-1 24 hrs. MS-DOS, others. Some emphasis on programming. Up- & downloads. Free. Registration required. Sysop: Kenneth Roach

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Oil Patch PC Board. (213) 427-5980. 300/1200 8-N-1 Eves. only. Exclusively C. Libraries; utilities; source code; tutorials. Sysop: Rick Shoop

Southland News. (213) 402-4079. 24 hrs. An online newsmagazine w/ general news, comments, entertainment, computer news show, club & swap meet listings.

The Great American Audio/Video Board. (213) 469-6542. 300/1200 8-N-1 Eves. Reviews, essays, buyers guide, instruction. Sysop: Keith Bass

Westside. (213) 933-4050. 3/12/2400 8-N-1 24 hrs. 17 lines w/chat, library, matching. Public & E-mail.

Beaver Creek. (213) 437-1410. 8-N-1 All but 4-9 PM. Sysop: John Campbell

Time-X-Change. (213) 329-3922. 300/1200 8-N-1 24 hrs. Timex-Sinclair & CP/M users Free Sysop: Dave Clifford

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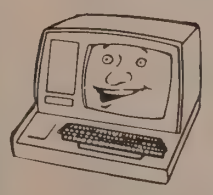

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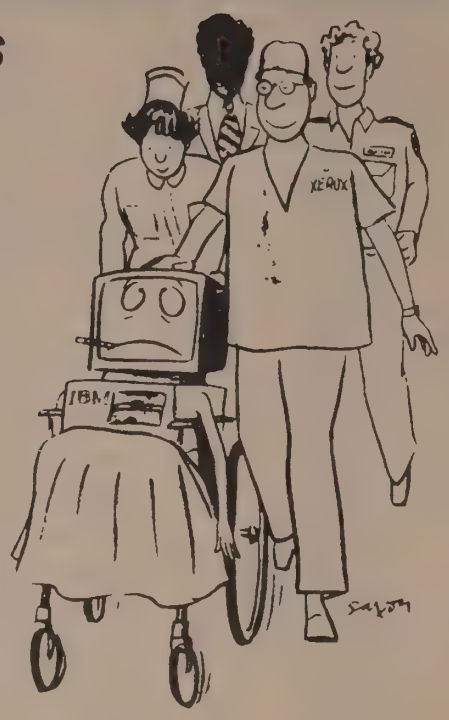

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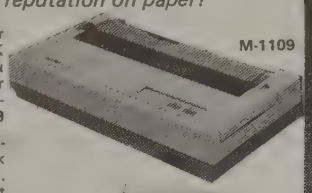

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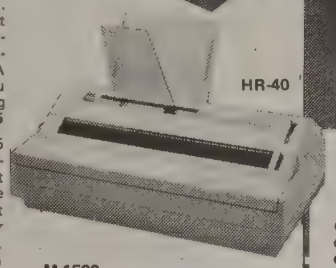

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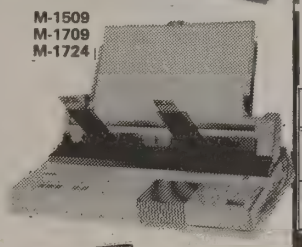

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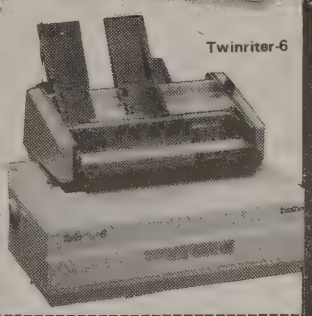

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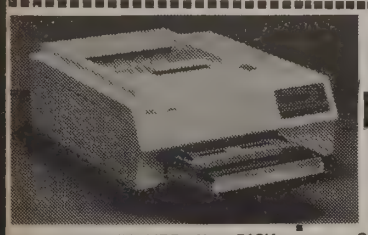

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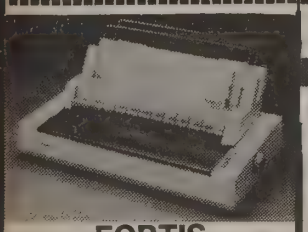

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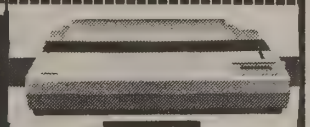

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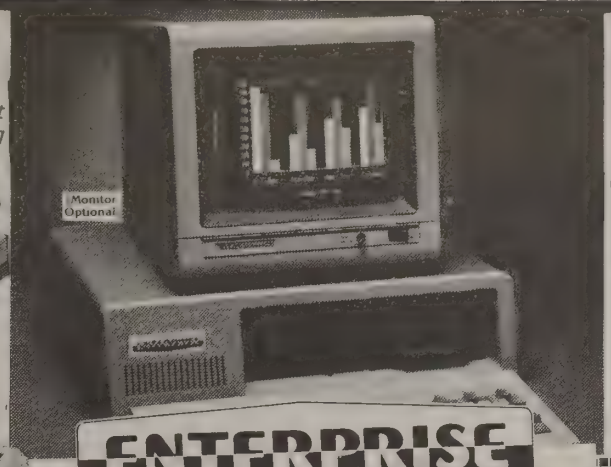

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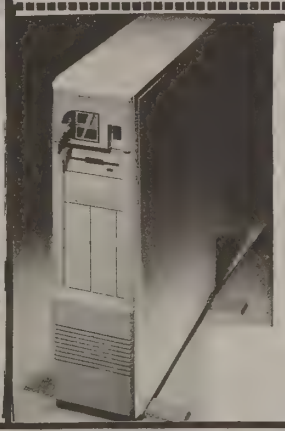

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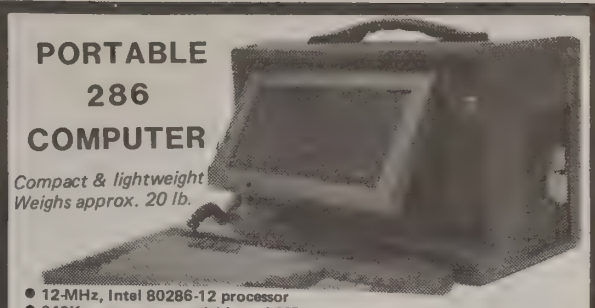

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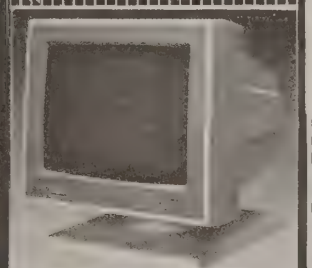

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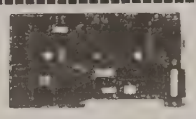

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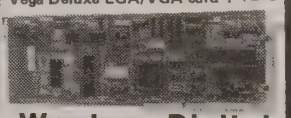

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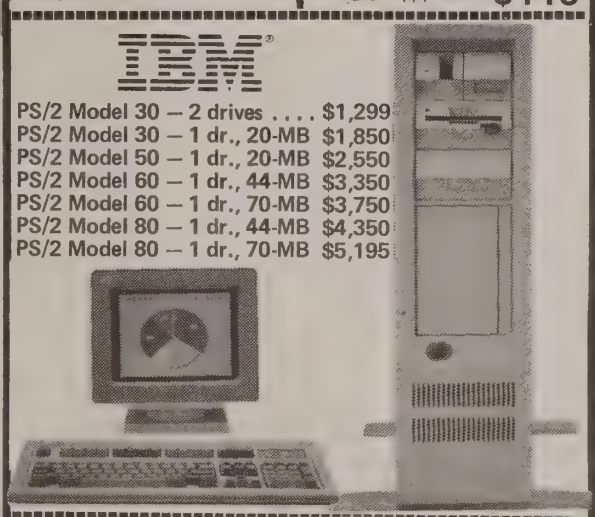

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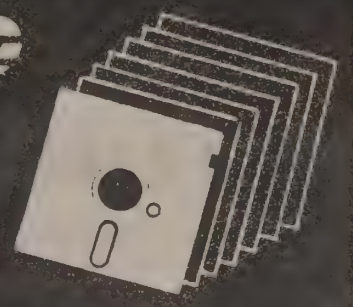

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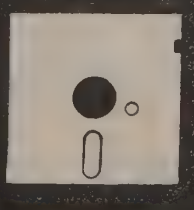

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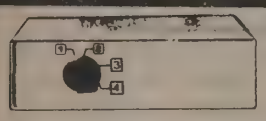

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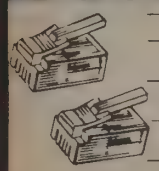
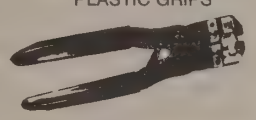
MODULAR CONNECTORS



	4 COND	6 COND	8 COND
10 pc	2.95	3.95	4.95
50 pc	10.95	12.95	14.95
100 pc	19.95	22.95	24.95
1000 pc	115.00	135.00	169.00

MODULAR CRIMPING TOOLS

STEEL BODY WITH SOFT PLASTIC GRIPS



4 or 6 COND.	8 COND.
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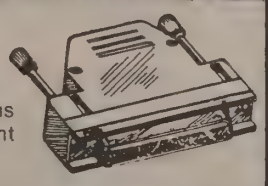

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25F-6 ..... DB-25	Female to 6 Pin RJ Jack
15M-8 ..... DB-15	Male to 8 Pin RJ Jack
15F-8 ..... DB-15	Female to 8 Pin RJ Jack
15M-6 ..... DB-15	Male to 6 Pin RJ Jack
15F-6 ..... DB-15	Female to 6 Pin RJ Jack
9M-8 ..... DB-9	Male to 8 Pin RJ Jack
9F-8 ..... DB-9	Female to 8 Pin RJ Jack
9M-6 ..... DB-9	Male to 6 Pin RJ Jack
9F-6 ..... DB-9	Female to 6 Pin RJ Jack

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	SINGLE	DOUBLE	SINGLE	DOUBLE	SINGLE	DOUBLE
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100 +	1.20 ea.	1.60 ea.	1.80 ea.	2.19 ea.	2.50 ea.	3.80 ea.

D-SUB MINIATURE HOODS

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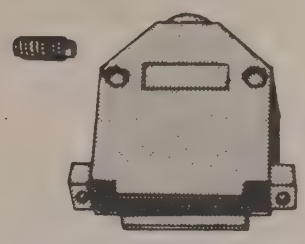

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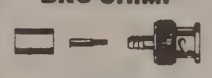
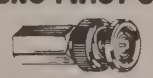


BNC CRIMP #30

10-49	69 ea.
50-99	64 ea.
100-999	59 ea.

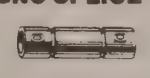
79¢ each



BNC TWIST-ON #31

10-49	1.10 ea
50-99	99 ea
100-999	90 ea

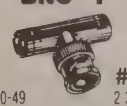
1.69 each



BNC SPLICE #35

10-49	1.09 ea
50-99	99 ea
100-999	94 ea

1.19 each

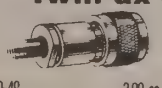


BNC "T" #41

10-49	2.30 ea
50-99	2.12 ea
100-999	1.95 ea

2.69 each

Twin-ax Connectors



10-49	2.90 ea.	10-49	3.69 ea.
50-99	2.65 ea.	50-99	3.35 ea.
100-999	2.45 ea.	100-999	3.09 ea.

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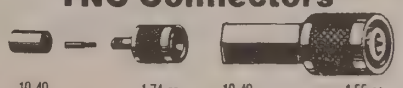
TNC Connectors



10-49	1.74 ea.	10-49	1.55 ea
50-99	1.58 ea.	50-99	1.42 ea
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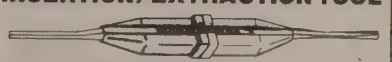
DB-15 Plug	.76	.59	.54	.44	.38
DB-15 Socket	.76	.59	.54	.44	.38
DB-25 Plug	.78	.61	.56	.46	.40
DB-25 Socket	.78	.61	.56	.46	.40

INSERTION/EXTRACTION TOOL



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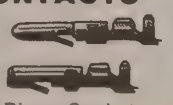
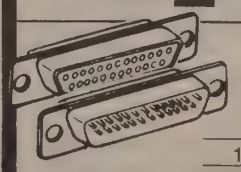


Pin or Socket (male or female)



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DB-9S Socket	.72	.54	.42	.39	.35
DB-15P Plug	.85	.65	.51	.47	.43
DB-15S Socket	.97	.77	.60	.55	.50
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DB-25S Socket	.97	77	60	.55	44

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❒ PRINTSHOP GRAPHICS (320) - 3 libraries for Printshop.
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DELOS. (818) 242-2365. 300/1200 24 hrs. Lo-cost access or free ltd. use. Serving the Gay Community. 10 lines for chatting! Library & many public boards.

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LEGACY - The Law Network. (818) 990-7600. 1200 8-N-1 24 hrs. Info on Computer Law, Entertainment Law, Comms. Law. Pro bono conference for free legal advice to non-lawyers. Sysop: Richard H. Kohn, Esq.

Lynzie's Motherboard. (818) 508-6482. 300/1200/2400 8-N-1 24 hrs. Multi-interest. Social events for users. If you're looking for a discriminating BBS, this is the place to be. Sysop: Lynzie Flynn

Mysteria. (818) 353-8891. 300/1200/2400. Occult & general text files, CP/M, turbo Pascal. Sysop: Phil Hansford

Oracle. (818) 509-9681. 300/1200/2400 8-N-1 24 hrs. 9 phone lines. System password MICROTIMES for higher access. Free demo version of Oracomm BBS software. Sysop: Gary Young

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The Software Bank. (818) 993-5516. 300 to 9600. Atari ST only. 65 megs. Node #95 of FNET. Exchg. messages & files w/users on other FNET BBS nationwide thru our network. Sysop: The Software Bank

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ASSOCIATIONS

Realtor Microcomputer UG (RUG). Meetings: 4th Thurs. 7 PM Pasadena BOR, cnr. Orange Grove & Los Robles, Pasadena, CA.

Computer Professionals for Social Responsibility. Meetings: Most third Wed. 7:30 PM UCLA. CPSR/LS focuses on computer system risk and reliability and on privacy and civil liberties issues.

Atari Computer Assoc. of Orange County (ACAOC). Meetings: 2nd. Sun. 1 PM Rancho Santiago College, Phys Ed. Bldg., Rm. W-101,Santa Ana.

California Educational Computing Consortium CCCE. For information write Herb Garrett, Long Beach City College, 4901 E. Carson Street, Long Beach, CA 90808.

USER GROUPS

AMIGA

Amiga Friends. Meetings: 3rd Sun. Rancho Santiago College, Rm R-124, 17th & Bristol, Santa Ana. Call for current meeting info: (714) 775-7237 (24 hrs.) or write: P.O. Box 4186, Huntington Beach, CA 92605.

Bits & Pieces Amiga Group of Anaheim. Meetings: each Tues. 6:30-10 PM 1130-A North Kraemer Blvd., Anaheim, CA. DOS Classes, tech. help & more. BBS: (714) 630-8897.

Long Beach Amiga UG. Meetings: 3rd Sun. 1-4 PM Mid-Cities Nat'l Bank, NE corner Lakewood & Artesian, Bellflower.

Pacific Computer Club. Meetings: 2nd Thurs. 7 PM 391 S. Madison, Pasadena, CA.

South County PC Users Group. Meetings: 3rd Sat. 9 AM American Savings, 23688 El Toro Rd., El Toro, CA.

South Orange Commodore Klub (SOCK). Meetings: 3rd Saturday 9:00 A.M. Union Savings, 23688 El Toro Road, El Toro, CA. For Commodore 64/128 users and Amiga users. One-hour general meeting is followed by separate group meetings for each.

Amiga Special Interest Group. Meetings: 1st Sunday except holidays. Chapman College, 333 N. Glassell, Orange, CA. Amiga SIG is part of the North Orange County Computer Club, a thousand member organization together 12 years.

AMSTRAD

AMSTRAD User Group, U.S.A. Meetings: 4th Tues. 7 PM & 8 PM Venice High School, 13000 Venice Blvd. Since Sears dropped the PCW8256, group formed so users/owners can support each other.

APPLE

Original Apple Corps. Meetings: 2nd Sun. 12:00 Noon 3rd Floor Community Room, Santa Monica Mall. First Apple group ever. SIGs for AppleWorks, Telecomm, Educators, Macintosh. Call Fred Duffy at (213) 396-5515.

Tri-City Apple Users Group. Meetings: 3rd Thurs; 7:00 PM, 50 N. Hill Ave., Pasedena. Call (818) 846-6682. Friendly Apple II experts.

ATARI

Santa Clara Valley Atari Computer Enthusiasts (SCVACE). Meetings: 1st Thurs. 7PM Mint Canyon Moose Lodge, 18000 W. Sierra Hwy, Canyon Country. 8-bit group. Atari ST special group now forming.

South Bay Atari ST Computer Club. Meetings: last Mon. 8 PM 15331 Praire Ave. Lawndale.

Atari Computer Association Of Orange County. Meetings: 2nd Sun. Rancho Santiago College, Room W101, Santa Ana. BBS: (714) 540-7378.

COMMODORE

OKOK Computer Users Group. Meetings: 2nd Wed. 7-9 PM Altadena Public Library, 600 E. Mariposa. Call (818) 794-3243. Serves, Osborne, Kaypro, Commodore C128, PCs and compatibles and both MS-DOS and CP/M operating systems.

Bits & Pieces Commodore Computer Group of Anaheim. Meetings: each Tues 6:30 PM 1130-A N. Kraemer Blvd. (Kraemer & La Palma), Anaheim. Offers public domain software, demonstrations, interactive training on your computer. $33 annual dues.

Commodore Users & Buffs Enthusiasts (C.U.B.E.). Meetings: 1st & 3rd Tues. 4:30 Mid-Cities Nat'l Bank, NE corner Lakewood & Artesia, Bellflower.

Commodore 64 Software Users Group. For new Commodore owners. One on one help. Call (714) 531-2977 for info.

Nebula 6. Call BBS for more info & online glance at what group offers. BBS (714) 595-6577 300/1200/2400. Write for info: P.O. Box 1071, Walnut, CA 91788.

Orange County Commodore Technical Users Group (C-TUG). Meetings: 4th Sun. 10:30 AM Mercury Savings & Loan, 4th & Newport, Tustin, CA. Newsletter; 2 BBS's; door prizes; SIGs in Comal; DOS protection data bases; wpros; & BASIC. Custom software, ROM chips.

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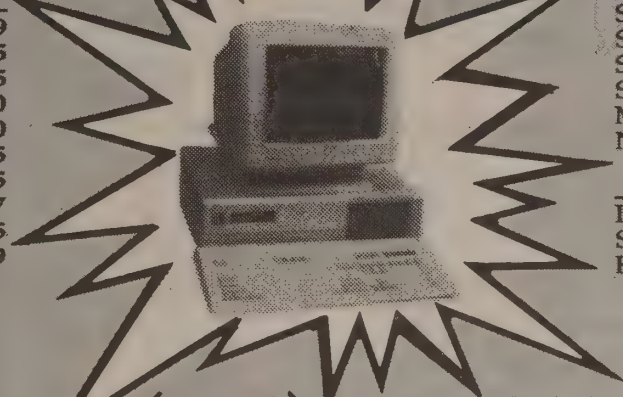

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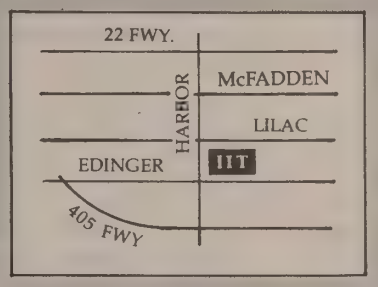

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What's Happening?

Check the MicroTimes Calendar of Events in this issue for computer-related classes, seminars, and shows in your area.

South County PC Users Group. Meetings: 3rd Sat. 9 AM Great American Savings, 23688 El Toro Rd., El Toro, CA.

South Orange Commodore Klub (SOCK). Meetings: 1st Wed. 7 PM Laventhol & Horwath, Exec. Conf. Rm.7th Fl., 3699 Wilshire Blvd., LA, CA.

Southern California K-Man Users Group. Meetings: 1st Wed. 7PM Laventhol & Horwath, Executive Conference Room, Seventh Floor. 3699 Wilshire Blvd., Los Angeles.

Pacific Computer Club. Meetings: 2nd Thurs. 7 PM 391 S. Madison, Pasadena, CA.

Pasadena Commodore Computer Club. Meetings: 1st and 3rd Weds. 7:00 PM Circadian Room, Pasadena City College Cafeteria. Colorado Blvd & Hill, Pasadena. Call (818) 447-2212 after 2:30 PST or write P.O. Box 163, Arcadia, CA 91006.Supports C64 and 128 machines.

South California Commodore Users Group. Meetings: 3rd Tuesday each month, 7:00 P.M., MidCities National Bank, Lakewood and Artesia Blvds., Bellflower, CA.

South Orange Commodore Klub (SOCK). Meetings: 3rd Saturday, 9:00 A.M., Union Savings, 23688 El Toro Road, El Toro, CA. For Commodore 64/128 users and Amiga users. One-hour general meeting is followed by separate group meetings for each.

dBASE

Valley West dBASE Users Group. Meetings: 3rd Mon. 7:00 PM Blue Cross Of California, 21555 Oxnard St., Woodland Hills. Call (818) 343-9033 or write P.O. Box 16971, Encino, CA 91416.

DEC

DECUS Rainbow Pacific PC-LUG. Meetings: 2nd Wed. 7:00 PM Digital Equipment Corporation, 6101 W. Centinela, Ave., Culver City. Digital Equipment Computer Users Society. Free to DEC users. Call Karen Danforth (818) 787-8736 or write P.O. Box 2278, Van Nuys, CA 91404.

EPSON

San Fernando Valley Epson QX User Group. Meetings: 3rd Tues. 7 PM Fallbrook Sq. Comm. Rm., Fallbrook Mall, 6633 Fallbrook Ave. Canoga Park.

IBM AND COMPATIBLES

OKOK Computer Users Group. Meetings: 2nd Wed. 7-9 PM Altadena Public Library, 600 E. Mariposa. Call (818) 794-3243. Serves, Osborne, Kaypro, Commodore C128, PCs and compatibles and both MS-DOS and C/PM operating systems.

Bits & Pieces Amiga Group of Anaheim. Meetings: 1st & 3rd Sat. 10 AM—2 PM 1130-A North Kraemer Blvd., Anaheim, CA. Sponsored by Transnational Electronics. BBS: (714) 630-8897.

Kern Independent User Group. Meetings: Write Kern Independent PC User Group, P.O. Box 2780, Bakersfield, CA 93303.

Long Beach IBM Users Group. Meetings: 3rd Wed. 7 PM Woodruff Medical Plaza, 3816 Woodruff Ave., Room A, Long Beach.

Pacific Computer Club. Meetings: 2nd Thurs. 7PM 391 S. Madison, Pasadena, CA.

Pasadena IBM Users' Group. Meetings: 3rd. Wed. CalTech, Bridge Bldg., Rm. 201.

QUICK & EASY Mailmaster User Forum. Meetings: monthly LA/Airport area. Users interested in maximizing performance of Quick & Easy.

South Bay Users Group (SBUG). Meetings: 1st Sun. Mercury Savings, Long Beach, CA.

Technical Users Group (TUG-NET). Meetings: Call for info (818) 882-6045. BBS (818) 882-6045.

The IBM & Compatibles User Group (ICUG). Meetings: 4th Thurs. 6:30 PM or 7:30 CAL Lutheran Univ., 60 W. Olsen Rd., Thousand Oaks. Group is 5 yrs. old & has 150 members Meetings begin at 6:30 for beginners, 7:30 regular members.

Calsonic PC Club. Meetings: 1st Tues. 5:15 PM 9 Holland, Irvine, CA.

PC*UG Computer Club. For Hughes Aircraft Employees. Call (213) 334-3422.

TRS Nybblers. Meetings: 1st Wed. 7 PM 2006 W. Magnolia, Burbank. Supports MS-DOS, CP/M, IBM or IBM clones.

Orange Coast IBM PC User Group. Meetings: last Sat. 9 AM Science Hall, Orange Coast College, Costa Mesa, CA.

Saddleback College IBM-PC Users Group. Meetings: 3rd Sat. Room 210, Business and General Science Building, Saddleback College, Mission Viejo. Call Susan Gordon at (714) 582-4650.

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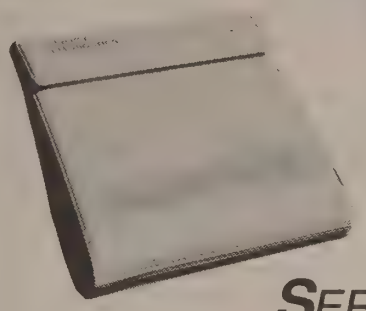

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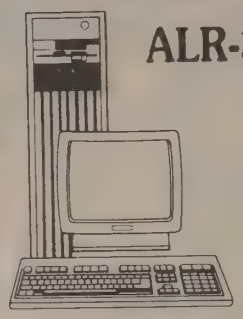

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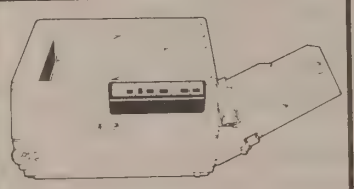

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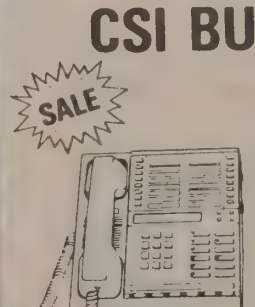

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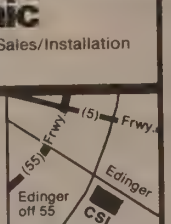

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Greater South Bay User Group. Meetings: 3rd Thursday, 7 P.M., Fellowship Hall, Christ the King Lutheran Church, 2706 W. 182 St., Torrance, CA. Bulletin Board, library and newsletter are featured services.

The Southern California K-Man Users Group. Meetings: 1st Wednesday, 7:00 P.M., Laventhol and Horwath, Executive Conference Room, 7th Floor, 3699 Wilshire Blvd., LA. Demo of the month features new software and hardware.

KAYPRO

OKOK Computer Users Group. Meetings: 2nd Wed. 7-9 PM Altadena Public Library, 600 E. Mariposa. Call (818) 794-3243. Serves, Osborne, Kaypro, Commodore C128, PCs and compatibles and both MS-DOS and C/PM operating system.

LEADING EDGE

Leading Edge Computer User Group of Ventura County. Meetings: 2nd. Sat. 10 AM Camarillo Library, 3100 Ponderosa Dr., Camarillo, CA. Lectures on hard/floppy disk usage; program demos; beginner classes. .Single: $20, couple $25.

MACINTOSH

MacValley. Meetings: 3rd Tues. 7:30 PM Burbank High School Cafeteria at Burbank Blvd. and Third St. Call Ruth Stever at (818) 848-1277 or write P.O. Box 4279, Burbank, CA 91503.

LAMG (Los Angeles Macintosh Group). Meetings: Call (213) 278-LAMG or write 12021 Wilshire Blvd. #349, Los Angeles, CA 90025.

Original Apple Corps. Meetings: 2nd Sun. 12:00 Noon 3rd Floor Community Room, Santa Monica Mall. First Apple group ever. SIGs for AppleWorks, Telecomm, Educators, Macintosh. Call Fred Duffy at (213) 396-5515.

MacValley Users Group. Meetings: June 21, 7:30 P.M. The cafeteria at Burbank High School, Burbank Blvd. at 3rd St. Todd Kutches of Brainpower will present Architext, a text retrieval, management and dissemination program.

West Orange County Macintosh Users Group (WOCMUG). Meetings: Last Tuesday. F & M Bank in Rossmore Center, Or-

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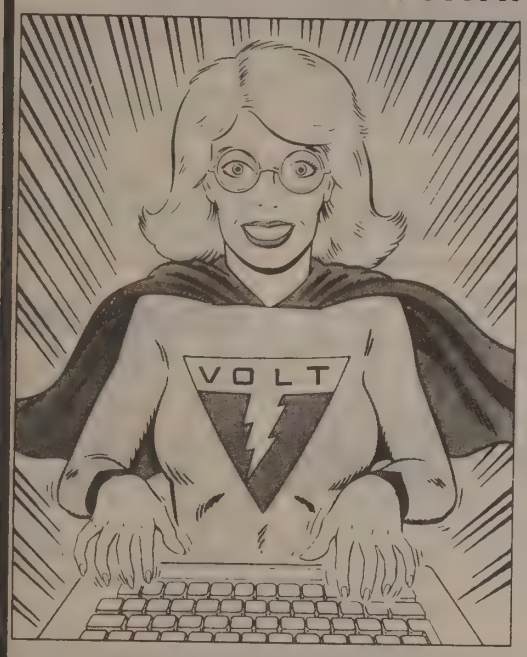

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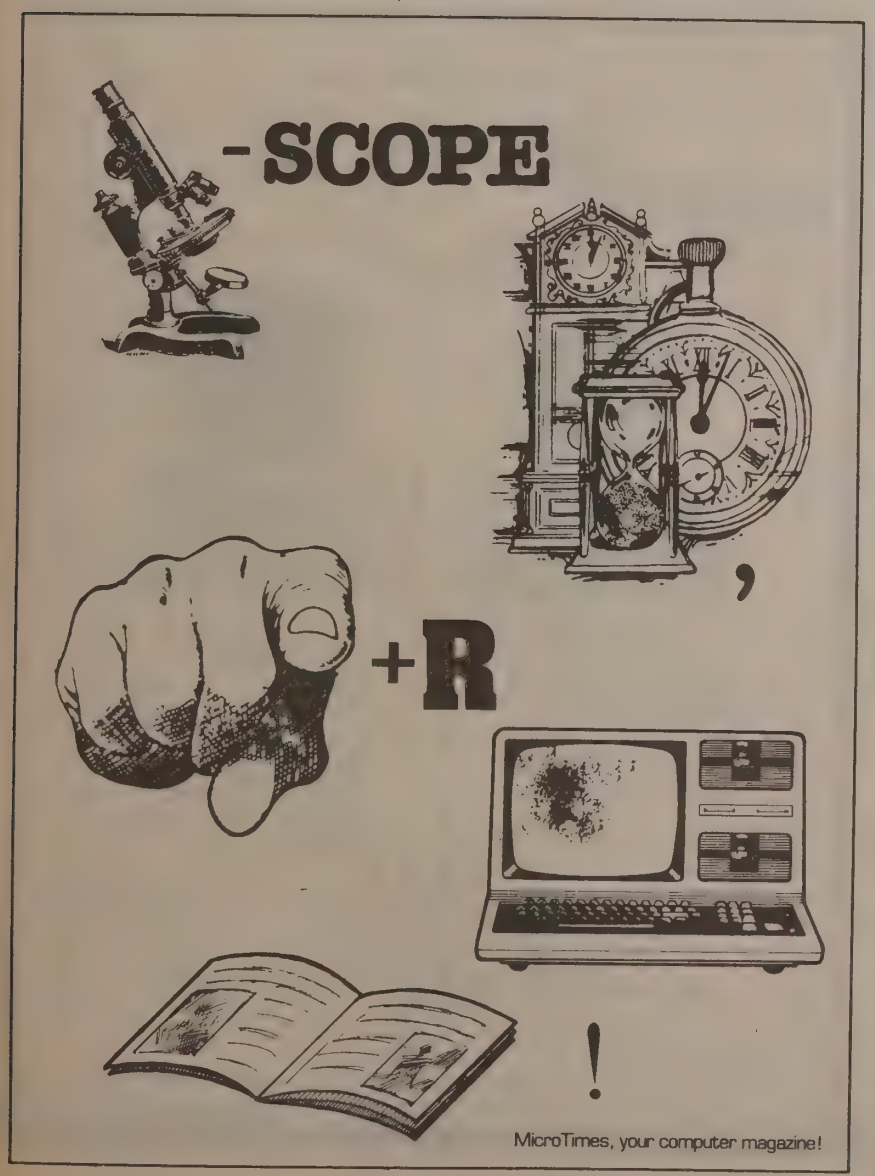

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OSAS Systems Users Group Los Angeles (OSASUGLA). Meetings: 1st Wed. Welcomes consultants, CPA's, dealers, users & QI's interested in sharing information on OSAS & related products.

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TANDY/RADIO SHACK

Los Angeles - Wilshire Color Computer Users' Group. Meetings: 2nd Sat. 12:30-5:30 PM Felipe de Neve Library's Comm. rm., 2820 W. 6th St., LA, CA.

South Bay Users Group (SBUG). Meetings: 3rd. Fri. Mercury Savings, 22939 Hawthorne Blvd., Torrance, CA.

TEXAS INSTRUMENTS

San Fernando Valley TI-99/4A User Group. Meetings: 2nd Wed. 7:30 PM Doctor's Conf. Rm., Sherman Oaks Hospital, 4929 Van Nuys Blvd. Call for info: (818) 248-9558.

SFV 99ers. Write: 2823 Sanborne Ave., La Crecenta, CA 91214.

TI Riverside UG. Meetings: Call for info: (213) 545-9581 or (213) 551-9454.

TI Users Group of Orange County. Meetings: 3rd Thurs., Peek Funeral Home, 7801 Bolsa Ave., Westminister. Call 633-7317.

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Timex-Sinclair Users Group. Meetings: 3rd Mon. 7 PM 11828 Jefferson Blvd., Culver City, CA.

Timex-Sinclair. Meetings: Call John W. Petersen (213) 545-9581 or George Kuby at (213) 551-9454. BBS:. Grey Matter (213) 971-6260.

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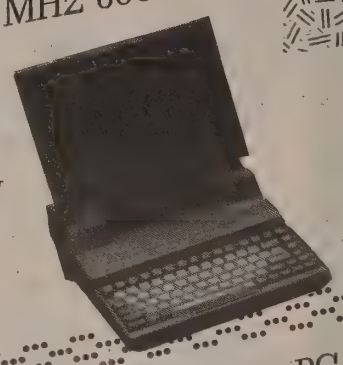

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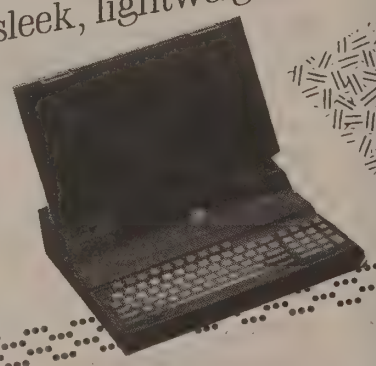

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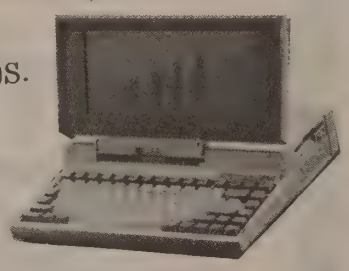

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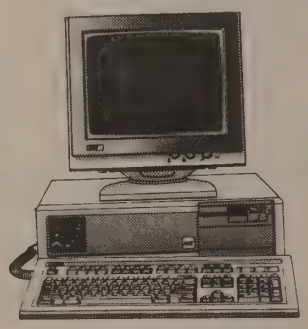

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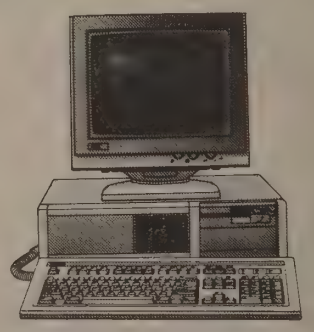

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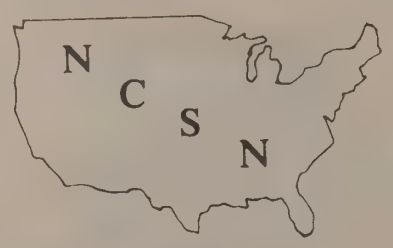

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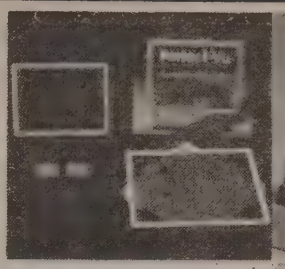

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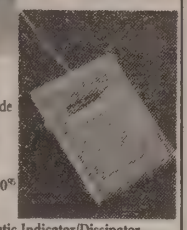
Optically correct shatterproof screen filters for just $29.95. Perfect-Vu screens reduce glare by 96%. Made of shatterproof, scratch resistant, and easy-to-clean specially formulated acrylic, which offers unique light absorbing and diffusing characteristics. Mounts in seconds to a terminal with self-stick Velcro fasteners $29.95

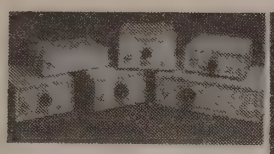
Order Code	Dimensions
AG-105700	10⅜" x 7⅞"
AG-105701	11 7/16 x 8⅜"
AG-105702	12" x 9½"
AG-105703	13" x 10 13/16"
AG-105704	12" x 8 13/16"
AG-105705	11⅝" x 8⅞"
AG-105706	12 11/16" x 7 13/16"
AG-105707	9⅛" x 7⅜"

NOTE: sizes shown are outer dimensions and include ¼" frame.

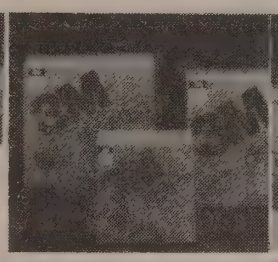
Deluxe 5¼" Diskette File
This disk file offers many features of more expensive products at a very low price. Made of high impact plastic with a smoked color locking lid. Stores 100 diskettes and comes with eight dividers and colored labels. Provides an easy access handle for transporting. DS-DX100L $10.95



Staticlear Static Indicator/Dissipator
This unique accessory virtually indicates and dissipates any harmful static the user might have before it charges through system components. A 10 foot long one megohm resistor grounding wire attaches to any 110 volt outlet. LCD display button dissipates it. Putty in color, constructed of high impact styrene. AS-450 ..... $24.95



Move computer data between multiple peripherals with a flick of a switch or the push of a button! **Belkin Data Switches** do away with the need to move cables manually from, for example, a letter-quality printer to a high speed dot-matrix printer. With the two-position switch available in both rotary and push button models, the operator can switch a computer port between a printer and modem, or share a terminal with two computer systems. Four position rotary switches can connect up to four compatible devices to a fifth So, four computers can share one printer or four terminals can share a single modem. There is even a five position rotary model available. All Belkin Data Switches are available for Centronics (Parallel) or RS232 DB25 peripherals. Come in a fully shielded metal case. One year warranty.

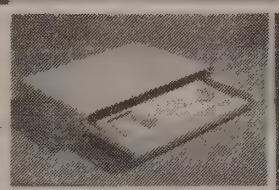


The Sound Manager
Acoustical printer enclosure blocks out more than 90% of printer noise for just $130.

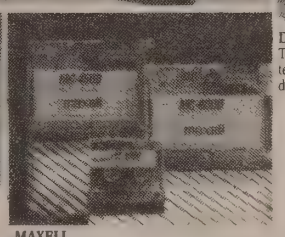
Quality materials, superior noise reduction and a low silhouette design make the Sound Manager enclosure the distinct, elegant alternative to bulky printer sound enclosures. Sound Manager lowers the printer sound level more than 20 dBA, significantly more than many other larger and more expensive sound enclosures currently on the market. Constructed of sturdy structural foam plastic, the unit is fully lined inside with thick, yet lightweight sound absorbing foam. A large angled tinted viewing window is set inside the high impact injection molded styrene top. Support legs are included to lift the unit three inches to accommodate a supply of paper underneath. Fits perfectly on top of the MicroManager. Inside dimensions are 7⅞" h x 24½" w x 16½" d.

And, it's available in a portable version, which includes a heavy duty carrying handle, lid clasps and nylon straps with release buckles to hold the printer securely in place while in transit. Also available is an optional 3" fan, easily installed with four screws.

Stationary Sound Manager
DF-4000 ..... $129.95
Portable Sound Manager
DF-4010 ..... $149.95
Sound Manager Fan
DF 4020 ..... $69.95



Easy Drawer
Cantilever drawer holds a keyboard up to 2¾" h x 20" w x 9½" d. Drawer extends to locked position. Computer and CRT are supported by a baked enamel reinforced steel platform. DF-DT21 ..... $79.95



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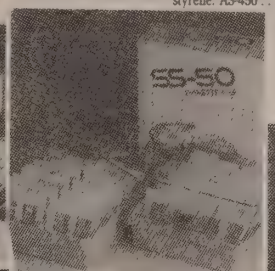
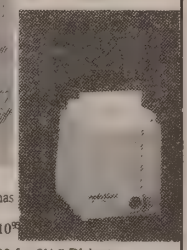
Data Cartridges

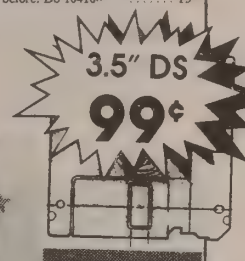
Description	Order Code
MC2050	TC-MC2050
Compatible with 3M DC2000	
MC4500	TC-MC4500
Compatible with 3M DC300XL/P	
MC6000	TC-MC6000
Compatible with 3M DC600A	
MC6000HG	TC-MC6000HG
Compatible with 3M DC6000A/DC600XTD but built for 33% longer operating life	

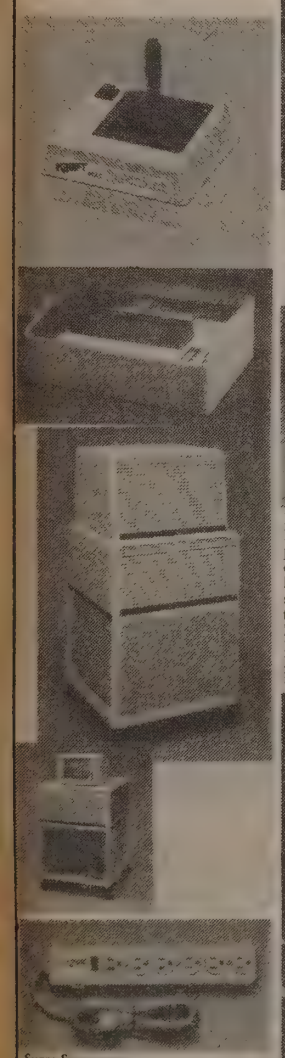


Deluxe 3½" Diskette File
The 3½" version of the Deluxe Disk File has ten dividers and stores 50 diskettes in a double row filing system. DS-SS50 ..... $10.95



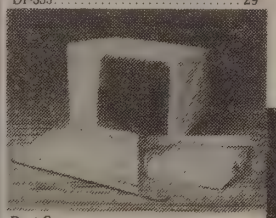
Dial 'N File 20 for 3½" Diskettes
This unique new Dial 'N File 20 storage case holds 20 3½" diskettes. With a turn of the dial each diskette rises individually and remains up until the dial is turned again, making diskette selection or viewing easier than ever before. DS-104106 ..... $19.95





Surge Suppressor
Single Stage Protection, DG-115S
SS-DG115S $39.95
Three-Stage Protection, DG-315S
SS-DG315S $69.95

Universal System Stand
This System Stand adjusts from 4" to 7½" to accommodate almost any system unit. Constructed of high-impact ABS, it is colored and textured to match or complement all microcomputer systems. Lifetime warranty.
DF-SS3 ..... $29.95



Dust Covers
Dust covers by Attitype provide economical protection for computer components from dust, dirt, and spills. Covers are made of heavy duty anti-static vinyl with machine stitched vinyl seams and are available in one, two or three piece styles.
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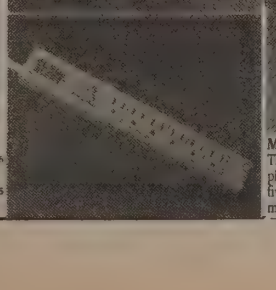
Pricing Code B $12.95
Pricing Code C $14.95
Pricing Code D $16.95

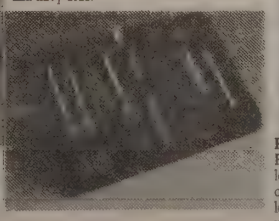
Universal System Stand
Gets the computer's bulky system unit off the desk and out of the way. Molded from high strength ABS plastic, this stand adjusts to provide solid support for any PC from 4½" to 6½" wide. Fits PCs from IBM, Apple, Compaq and others. DF-62200 ..... $29.95

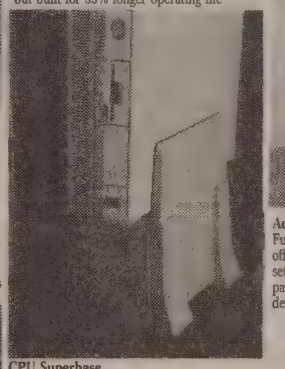


Mailbox
This anti-static mailer is made of durable plastic to protect diskettes in transit. Holds five diskettes and comes with self-adhesive mailing label. DS-DX4 ..... $1.95

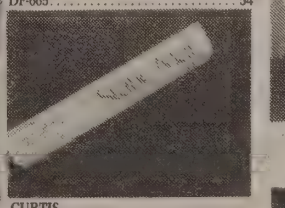
CRT Bridge
Three great features in one for a low retail price of just $49.95. A 12" w x 12" d x 5½" h platform lifts the CRT off the desk to clear room for other desktop items below. A 2" h swivel base attached to the top of the platform holds the monitor and provides 360 degree revolution and 12.5" up and down tilt. Finally, a 9¼" w x 11¼" d storage area under the platform holds off miscellaneous items. DF-480 ..... $49.95

Cases
P.A.C.E. soft-sided cases provide the best possible protection for portable computers with high density foam padding. All feature heavy duty YKK zippers, molded Fastex hardware and adjustable padded shoulder straps. Each case is equipped with accessory pockets and a locking zipper pocket to help protect valuable diskettes. Available in gray and navy blue.





CPU Superbase
This unique stand vertically positions CPU next to the desk at an elevation of 9" for easy access disk drives. A built-in storage unit below is ideal for hiding a surge suppressor or excess cables. Holds CPUs 3¾" to 6¾" wide via adjustable support clamps. Constructed of beige high impact styrene.
DF-665 ..... $54.95



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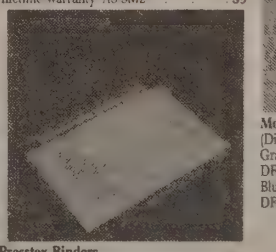
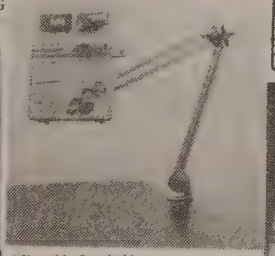
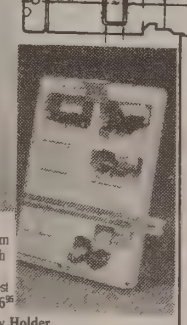
Dissipates potentially dangerous static discharge, 18" x 23", ground line included, lifetime warranty AS-SM2 ..... $39.95



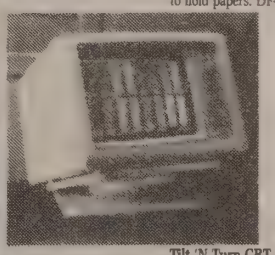
Presstex Binders
Easy to clean Presstex binders last 10 times longer than traditional products. Have 6" capacity with convenient top and bottom leading. All binders are sold in boxes of 10 units.



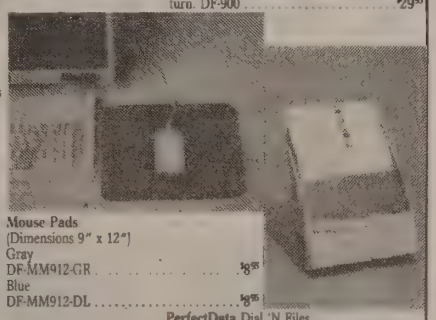
Adjustable Copyholder
Fully adjustable copyholder with flexible arm offers see-through line guide with three pitch settings and a non-magnetic clip to hold papers. The sturdy metal unit clamps to most desktops. DF-DT32A $36.95



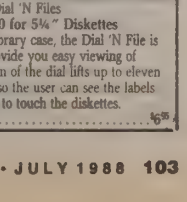
Desktop Copy Holder
This desktop copy holder has a see-through detachable line guide and a non-magnetic clip to hold papers. DF-DT31A $14.95



Tilt 'N Turn CRT Stand
Fits large CRTs with feet separation up to 12" x 12". Provides 25 degree tilt and 360 degree turn. DF-900 ..... $29.95



Mouse Pads
(Dimensions 9" x 12")
Gray
DF-MM912-GR $8.95
Blue
DF-MM912-DL $8.95



PerfectData Dial 'N Files
Dial 'N File 10 for 5¼" Diskettes
The ultimate library case, the Dial 'N File is designed to provide you easy viewing of diskettes. A turn of the dial lifts up to eleven 5¼" diskettes so the user can see the labels without having to touch the diskettes.
DS-103607 ..... $6.95

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DB001	PC File Plus 2.0 (3)-Super Data Base	**LC025**	Turbo C Debugger
DB003	Dbase3 Tools-Code Analyzer +	**M000**	ProComm Plus-Modem Program
U010	Great Mail List Manager-Mass Appeal	**E009**	Homebase 2.5 Sidekick + (3)
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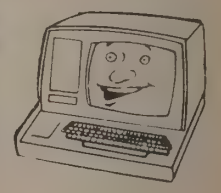

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- Available in color

Call for price

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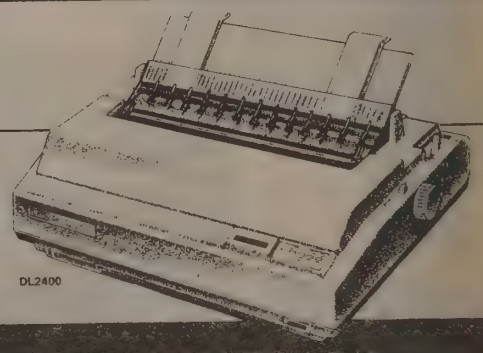
- Emulates Diablo 630 API, IBM Graphics Printer and IBM Proprinter XL
- Serial and parallel interface
- Available in color
- 16 character LCD panel

Call for price



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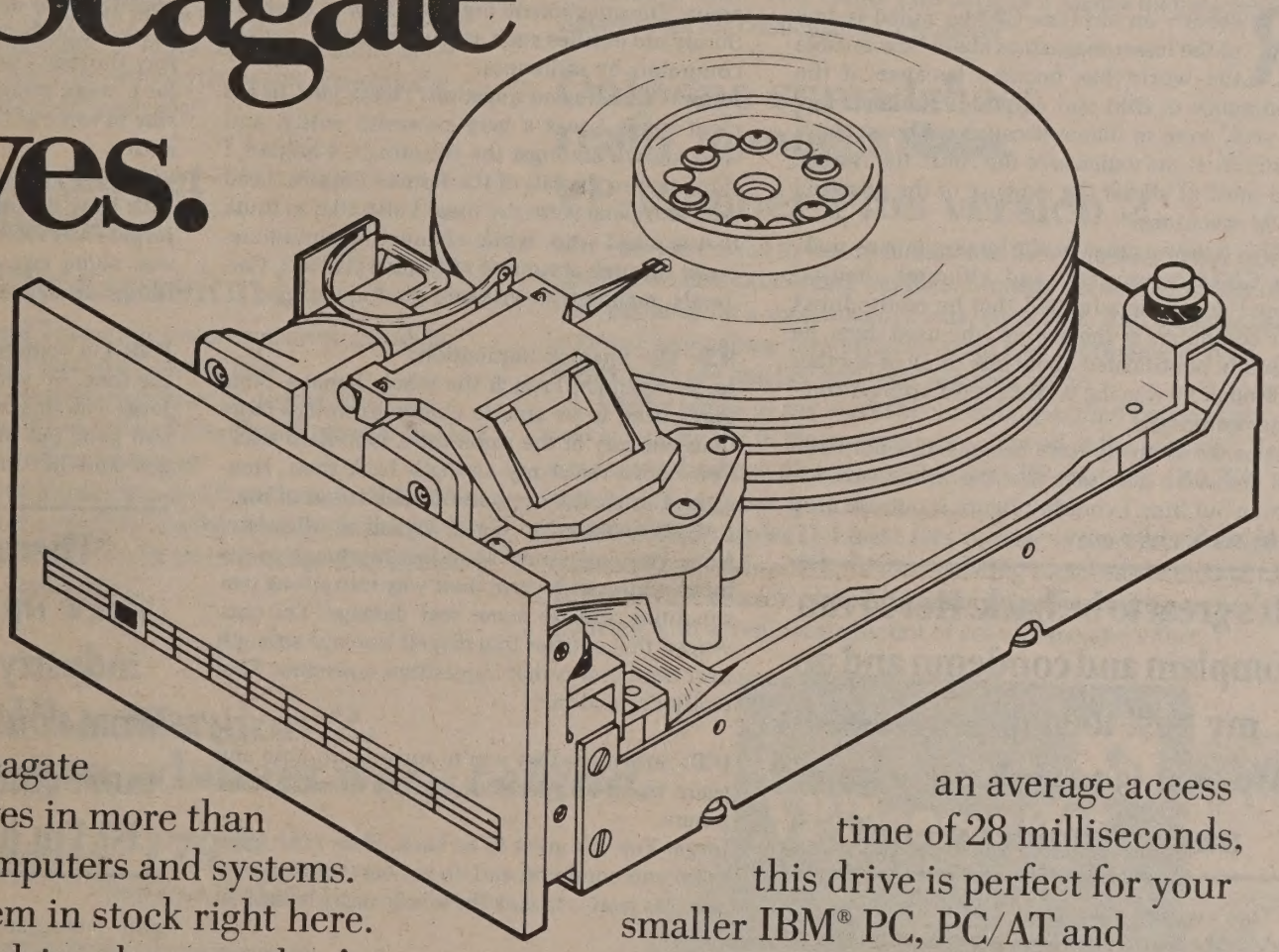

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DVORAK'S LAST COLUMN

Channeling A Demon:

Jorge, The Entity From The Second Plane Of The Infinite Interregnum, Tells It Like It Is

By John C. Dvorak

Recently an old time CP/Mer railed in one of the lesser magazines about how terrible the world has become because of the dominance of IBM and Apple. Columnists too, he said, were to blame because we boost these products at the expense of the Atari, the Amiga, and most of all "at the expense of the good old CP/M machines."

This fellow once owned a large company making CP/M computers, and although, behind closed doors, he admitted that he really didn't like computers or the people who used them, he publicly pontificated about one thing or another as though he was the world's most attuned computer enthusiast.

Alas, he seems to have become an embittered old crab who now says that the whole world is wrong but him. I couldn't figure it out. He used to be such a nice guy.

"It's great to be back. Here I can complain and condemn and do my best to stop progress. My goal is to sink the whole nasty computer scene."

That's when I did some research. The old crank I describe is not really one person. In fact, it turns out that it's an entity that shows up here and there and channels itself through whatever willing malcontent it can find. The most likely victim is someone who was once in the spotlight, has faded from view, desperately hopes to make a comeback and just can't manage the energy. It may be the wrong time or the wrong place — whatever it is, it won't happen. In this industry fortune is a lottery, and few people win the lottery more than once. If they don't quit winners, they go the way of this poor fellow, blaming the squandering of their one opportunity on everyone but themselves. Soon the entity gets them.

I went to some professional channelers and discovered that the name of this entity is Jorge (pronounced "hor-gay") from the second plane of the infinite interregnum. On April 22 Miss Diva Massa Mann of Berkeley channeled the entity Jorge for me, and I was able to interview this beast without the usual intermediary (the above-mentioned ex-luminary) and talk to it directly. The results of the interview follow.

JCD: Jorge, I have some understanding of what you've been doing recently in the microcomputer arena. The question on my mind is: who are you? Surely old entities such as yourself must predate computers by millennia.

Jorge: That's a good question. Thank you. In ancient times I was a very powerful entity, and well known amongst the illuminati. I helped, I think, cause the fall of the Roman Empire. Lead pots and pans were my idea! I also like to think that it was I who, while channeling simultaneously through a number of Roman Catholic Cardinals, managed to institute the Inquisition.

JCD: The Spanish Inquisition?

Jorge: Spanish, French the whole banana. Note that I used to be able to channel through more than one guy at the same time. One hard trick! Few could resist my strength back then. Honestly, I think the Inquisition took it out of me.

Oh, I managed to instill myself in Mussolini some years ago, but I soon lost my touch to demons who could worm their way into strong personalities and do some real damage. I'm convinced that entities like myself lose our strength over time. It was that Inquisition nonsense. That really drained me.

JCD: So we see that you're turning up now and again in, of all places, the world of small computers.

Jorge: Yes, it's great to be back. Here I can complain and condemn and do my best to stop progress. My goal is to sink the whole nasty computer scene.

JCD: What for?

Jorge: Do I need a reason? This is my job. I find a willing victim and then channel through the person a lot of vitriol and arrogance. I can't make a Mussolini anymore, but I can stir up some sediment.

JCD: How do you choose your victim?

Jorge: First of all I have to find a person with few or no scruples. The best is a thankless person who, for whatever reason, has not been as successful as he or she should have been. This type of person wants to blame everyone else for any mistakes the person makes. If the person ever accepts responsibility, then it's only because they were "tricked." Then they blame the perpetrator. Again they let themselves off the hook. It's never their fault.

Once the person meets this criterion I look for two other signs. The first is that they appear to be bitter about their situation.

JCD: The second?

Jorge: A weak mind — one that can easily be penetrated by a feeble old entity like myself. I haven't got the strength anymore to punch my way through anyone with, say, character. I wait for a weak moment, then move in. Heck, I can stay in some of these people for days before they notice.

JCD: How do they notice?

Jorge: They look in the mirror, so to speak. There was some guy recently who said some nasty things about you — remember him? That was me!

JCD: I'm flattered you care, but it happens all the time. So what else is new?

Jorge: No, this one was great. You, over the years, had gone out of your way to help promote this guy and his long-defunct company. He owed you. I breezed right in and he turned on you. Haha. After he did it, he realized what had happened, and I took the back door out. He's an easy target though — I own him.

"There's no way I could screw up the microcomputer industry. Look around you. What could make it worse and more confusing than it already is? I'm just in it for laughs."

JCD: I don't know who you mean, but I think it's terrible. Have you no heart?

Jorge: Are you kidding? Of course not. Although the good old Inquisition is only a lingering memory, I can still hope for a comeback. I have to admit that it will never be through the likes of the guys in this business. There's no way I could screw up the microcomputer industry.

JCD: Why not?

Jorge: Look around you. What could make it worse and more confusing than it already is? I'm just in it for laughs.

Just then Miss Diva Massa Man let out a huge laugh, trembled and returned to her normal self. She shook her head and told me that the entity was creepy and she'd rather I keep these demons from making contact through her. I gave her the agreed-upon $15 and left. Now I'm on the lookout for Jorge and any other micro demons, hoping they don't try to channel through me. □

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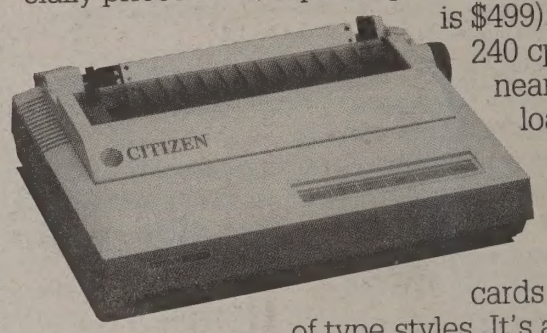

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